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Gender Mainstreaming as a Knowledge Process: towards an understanding of perpetuation and change in gender blindness and gender bias

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Contents

Table of Figures

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Abstract

This thesis locates itself in wider developments in gender theory and examinations of the state's production of gender inequality. It responds to two research problems in existing literature. Firstly, scholars have developed increasingly complex theorisations of the social construction of gender and the state's role in it. This body of research has shown how gender blindness and gender bias in state policies produce inequality and how gender structures priorities, hierarchies and roles within state organisations. Fully operationalising these insights has, however, thus far proved difficult. Secondly, whilst existing research provides a nuanced picture of these multiple dynamics involved in the state's reproduction of gender inequality, we cannot yet fully account for the processes through which these dynamics are *maintained.* As a result, our explanations of how change could be achieved are also under-developed.

This thesis uses gender mainstreaming (GM) implementation as a model to explore these research problems, examining the processes underlying the 'disappointing' policy outcomes which existing analyses of GM implementation have documented (Bretherton 2001, Daly 2005, Mazey 2000). Whilst these existing studies provide an essential starting point, this thesis argues that many have applied an implicitly rigid or rationalistic approach to policy analysis, highlighting the disparity between the intended and actual outcomes of GM. This kind of approach fails to operationalise our understanding of the construction of gender as a process and a constantly renegotiated phenomenon. It also fails to exploit the research opportunities which GM implementation provides.

To enable such an analysis, this thesis draws together literatures from policy studies, particularly interpretative policy analysis (Colebatch 2009, Pressman and Wildavsky 1984, Yanow 1993) and science and technology studies/the sociology of knowledge (STS/SK) (Latour and Callon 1981, Law 1986) to apply an understanding of policy implementation as a process of negotiation, where we analyse how policy is interpreted, understood and enacted, on the ground. This perspective emphasises how local responses to strategic policy demands emerge through *collective processes* of interpretation, which are heavily affected by pre-existing policy assumptions, activities and practices (Wagenaar 2004, Wagenaar et al 2003).

These concepts are used to operationalise the concept of gender knowledge (Andresen and Doelling 2002, Caglar 2010, Cavaghan 2010, 2012, Doelling 2005) to investigate how shared (non)perceptions of gender inequality are institutionalised and perpetuated, whilst competing notions are marginalised. Thus developed, the gender knowledge concept enables us to grasp and analyse (non)perceptions of the gender inequality issue; the evidence or ways of thinking which underpin them; and the processes, materials and persons involved in institutionalising them to the exclusion of competing perceptions.

This approach therefore operationalises the notion that gender and gendering is a process and connects the 'genderedness of organisations' (Benschop and Verloo 2006, Rees 2002) to gendered policy outputs. Examining 'what is happening' when GM is implemented in this manner provides an opportunity to identify mechanisms of resistance, i.e. the processes through which the production of gender inequality is maintained. By corollary, examining 'successful' incidences of GM implementation provides empirical examples of how change has occurred. The project thus aims to produce theoretical insights which can be extrapolated to a wider understanding of the perpetuation of the state production of gender inequality.

Declaration

I hereby declare that, except where otherwise indicated, this thesis is entirely my own work, and that no part of it has been submitted for any other degree or qualification.

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Introduction

The Research Problem

Gender Mainstreaming (GM) was promoted by the UN as the central recommendation in its 1995 Declaration and Platform for Action following the Fourth UN World Conference World Conference on Women. Pre-existing gender equality policies such as equal opportunities or positive action approaches, implicate discrimination as the cause of gender inequality (Squires 2005, Rees 2005). GM, by stark contrast, implies that the state must change its policies, obliging adopting governments and organisations to consider gender equality issues in all policy making, in all areas (Squires 2005, Rees 2005). This attention to state action in the production of gender inequality owes its origins to feminist theory and activism (Carney 2002: 19, Walby 2007: 453), which have identified the social construction of gender structuring multiple areas of social and political life, and the state's subsequent role in the production and enforcement of gender inequality through its policies and practices (Hawkesworth 1994, 1997).

The rapid international uptake of GM, after the UN's promotion, in over 100 states and multiple supra-national organisations (True and Mintrom 2001: 27), prompted significant optimism in the feminist community as a result (Beveridge and Nott 2002, Meier and Celis 2011). Over ten years on however, the results of GM have been disappointing. Despite high levels of rhetorical commitment to GM, research into its results does not demonstrate a significant reduction in gender inequality, nor significant change in state policy. Implementation is often patchy and the content of 'gender mainstreaming' policies often show that both the structural conception of gender inequality, and the focus on changing state policy often

disappear, or are watered down in 'gender mainstreaming' policies (Bretherton 2001, Daly 2005, Mazey 2000). This thesis argues that the disappointments in GM implementation demonstrate a shortcoming in existing theories of gender and the state.

Reviewing existing research, this thesis argues that though scholars have developed increasingly complex theorisations of the social construction of gender and the state's role in it, these advances have not been matched by adequate empirical operationalisation of these processes. Furthermore, whilst existing research provides a nuanced picture of the multiple dynamics involved in the state's reproduction of gender inequality, we cannot yet fully account for the processes through which these dynamics are *maintained.* As a result, our explanations of how change could be achieved, are also under-developed.

These lacunae have affected the implementation of GM itself. The theoretical processes through which change could occur through GM have in many respects been under-theorised, or 'fuzzily' described (Mazey 2000, Daly 2005) in the elaboration of the policy itself, whilst the limited operationalisation of our complex theories of gender in the state, is evident in our analyses of GM implementation. Many existing studies of GM have applied an implicitly rigid or rationalistic approach to policy analysis, highlighting the disparity between the intended and actual outcomes of GM.

This rigid approach to policy analysis fails to fully operationalise our understanding of how gender functions in, and is constructed by, the state. Surveying feminist political science (FPS), feminist policy analysis (FPA) and feminist organisational

sociology (FOS), at least three relevant dynamics can be highlighted in the state production of gender inequality. Firstly, the state impacts on wider society through its policy. Secondly, gendered practices within its organisations construct hierarchies limiting women's influence and power within them and thirdly, gendered norms and images normalise the exclusion of women's political interests and de-politicise and hide gender inequality. Thus, existing analyses of GM policy which have adopted a macro-level perspective and highlighted GM's poor outcomes, do not engage with the these complex processes constructing gender within the state. Displacing or disrupting these dynamics, is however the central aim of GM, as conceived by feminist theorists and activists and should thus form the focus of analysis of it.

Theoretical Contribution

This thesis argues therefore that a macro-level analysis is inadequate in view of our existing understanding of the complex construction and operation of gender within the state. It builds its analysis on some of the more recent micro examinations of GM implementation which have shown how rhetorical support for gender equality and GM is routinely accompanied by articulations that gender is not relevant *here* or that 'there is no problem'. This thesis argues that these findings converge with existing insights of FPS, FPA and FOS to demand an analysis of the processes maintaining the co-existence of gendered and gendering practices, with gender blindness, e.g. the institutionalised ignorance of gender inequality. It eschews macro level analysis, or the consideration of rhetorical commitments to GM, in favour of an investigation of micro level day-to-day practices involved in the implementation or rejection of GM.

In essence this constitutes an investigation into the mechanisms through which the 'genderedness' (Benschop and Verloo 2006) of organisations lends resistance to GM, and the mechanisms through which change is achieved. The project thus aims to produce theoretical insights which can be extrapolated to a wider understanding of the perpetuation of the state production of gender inequality.

In order to do this, this thesis draws several literatures together from policy studies (Colebatch 2009, Pressman and Wildavsky 1984, Yanow 1993, 2008) and science and technology studies/the sociology of knowledge (STS/SK) (Latour and Callon 1981, Law 1986, 2003, Sinclair 2000, Latour 2005, Lendvai and Stubbs 2006), to apply an understanding of policy implementation as a process, where we analyse how policy is interpreted, understood and enacted, on the ground. This perspective emphasises a view of the state as a collection of overlapping and competing networks, containing different logics of decision making and assumptions (Newman and Clarke 2008). These literatures thus argue that we should examine how local understandings of policy and required action, emerge through *collective processes* of interpretation, which are heavily affected by pre-existing policy assumptions and practices (Johnstone 2005, Wagenaar 2004, Wagenaar et al 2003).

These insights are then used to operationalise the concept of gender knowledge (Andresen and Doelling 2002, Caglar 2010, Cavaghan 2010, Cavaghan 2012, Doelling 2005) and to investigate how shared understandings of gender inequality emerge and are institutionalised and perpetuated whilst competing notions are marginalised. Thus developed, the gender knowledge concept enables us to grasp and analyse (non)perceptions of the gender inequality issue; the evidence or ways of thinking which underpin them (gender blindness); and the processes, materials and persons involved in institutionalising them to the exclusion of competing perceptions.

This approach therefore operationalises the notion that gender and gendering is a process and connects the 'genderedness of organisations' to gendered policy outputs. Examining 'what is happening' when GM is implemented in this manner, even in instances of insignificant change, provides an opportunity to identify mechanisms of resistance, i.e the processes through which the production of gender inequality is maintained. By corollary, examining 'successful' incidences of GM implementation provide an insight into how change has occurred.

The Research Case

This project examines GM implementation in DG Research (Directorate General for Research), the arm of the EU Commission overseeing science and research policy implementation. Commitment to gender equality has been a defining characteristic of the EU since its inception at the Treaties of Rome. More recently, the EU's commitment to gender equality has been further constitutionalised with the adoption of gender equality as an aim of the European Union in the Treaty of Amsterdam in 1997, and horizontal policy initiatives such as The Communication on Mainstreaming[1], in 1996. These developments have been further matched by commitment to GM combined with specific actions, as the EU's 'dual approach' to gender equality outlined in the EU's Equality Strategy[2].

[1] The 1996 Commission Communication on Mainstreaming Equal Opportunities into all policy areas (Com (96) 67 final).

[2] Fourth Medium-term Community Action Plan for Equal Opportunities (1996 – 2000), Community Framework Strategy on Gender Equality (2001–2005), Roadmap for Equality Between Women and Men (2006-2010).

The EU's active response to gender equality issues, and its arguable status as a leader in the gender equality agenda, thus render its institutions as an important focus for examination of GM. This thesis examines DG Research for two reasons. Firstly, DG Research engaged very actively with the gender equality agenda from 1998-2006, developing one of the most advanced and active GM apparatuses within the Commission (Rees 1998) whilst starting from a very low awareness of gender inequality issues. Secondly, DG Research is divided into sub-units, 'Directorates', where the 'success' or extent of GM implementation varies. This thus enables an analysis which encompasses examination of both change as a result of GM, and of non-change and resistance to the policy. The research design thus encompasses analysis of one Directorate where GM has been 'successfully' or extensively implemented, and one where the policy has made little impact.

Chapter Structure

Chapter One introduces GM and outlines the feminist theory upon which the policy is premised. Here, I outline the three intersecting dynamics which feminist research has identified in the state's construction of gender inequality and the lacunae in our understandings of the replication and persistence of these dynamics. I argue that GM implementation provides an opportunity to tackle these *problematiques*. I next review existing research on GM identifying key themes, findings and remaining puzzles, formulating a conceptualisation of GM as a process which draws on recent implementation studies (Bacchi and Eveline 2010, Benschop and Verloo 2006, Meier 2006). Here, I argue a more nuanced conceptualisation of policy which takes account of the relationship between pre-existing practice, structures and policy, is required.

Chapter Two introduces the concept of knowledge and the policy studies literature to build a theoretical perspective, which enables this kind of analysis. First, it reviews literature demonstrating the collective processes through which actionable and mutually intelligible understandings of policy emerge, before introducing the gender knowledge concept and the small existing literature which has used it. I then turn to STS/SK to develop an analysis of gender knowledge to its full potential, highlighting how it enables us to operationalise our conceptions of gender and the power dynamics involved more thoroughly. Here, several concepts are introduced: material forms of knowledge, associations of persons, mobilisation, stabilisation, boundary work and epistemic characteristics.

The resulting synthesis enables an examination of the GM policy implementation process in terms of competition between new conceptions of the gender inequality problem and the pre-existing gendered assumptions at play in policy, and in action; of the episteme and evidence which underpins each, thus capturing gender blindness where relevant; and the material processes and power dynamics, which institutionalise or marginalise both.

In Chapter Three, I describe the personal motivations and professional experiences, which have informed this research and the processes through which my theoretical perspective evolved. Here, I describe my grounded theory research strategy and the interpretive approach. The research design tracing GM implementation from initial stages, through 'the Gender Unit' and into two operational Directorates is explained, along with the methods used to gather and analyse data, and the measures taken to maximise the quality of the research findings.

The research location, DG Research is then introduced in the first empirical chapter, Chapter Four. Here the 'mainstream' policy agenda in DG Research is described along with processes which constitute and coordinate it. The policy process constituting GM is then described, outlining how GM came onto the agenda in DG Research. Here I highlight how implementers had to 'start from scratch', with very little awareness of gender inequality or gender issues in their work. Reviewing the actions they subsequently undertook, I present the new notion of gender inequality in science and requisite actions which they elaborated, and the methods through which they sought to mobilise action around it.

This next stage of progress into implementation is then traced into two operational Directorates, Directorate E and Directorate J in Chapters Five and Six respectively. This material depicts the GM implementation process 'on the ground'. Each case study presents the gender knowledge articulated within the case and an analysis of processes through which GM policy imperatives have been interpreted and processed.

Chapter Seven compares and discusses the empirical findings in each case and presents a discussion of the GM process throughout DG Research, as revealed with this conceptual approach. Comparing the two case study Directorates it discusses findings in terms of content of gender knowledge, gender blindness and the processes institutionalising or challenging them. It also describes the dynamics of change and the mechanisms of resistance, which GM in this instance has brought about.

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Chapter One Introducing Mainstreaming

In theory, GM entails taking gender into account at all stages of policy planning and implementation, in all departments ('the mainstream'). Its widespread rapid adoption in the late 90's, prompted significant optimism amongst feminist activists (Woodward 2003). No single description of the policy can be cited as definitive (Mackay and Bilton 2000). In fact, the wide variety of actions which adopting states and organisations subsequently deemed gender mainstreaming, forms a focus of empirical research on GM (and will be discussed below). The key themes of the policy as conceived of by the NGOs and gender equality lobbyists who developed it, become apparent however, when we refer to some of the early documents promoting gender mainstreaming. The 1995 UN Platform for Action repeatedly stated:

> "Governments and other actors should promote an active and visible policy of mainstreaming a gender perspective in all policies and programmes, so that, before decisions are taken, an analysis is made of the effects on women and men respectively."[3]

Whilst the Council of Europe's frequently cited best practice guide on GM (2004) defined the policy as follows:

> "Gender mainstreaming is the (re)organisation, improvement, development and evaluation of policy processes, so that a gender

[3] United Nations (1995) Beijing Declaration and Platform for Action,

> equality perspective is incorporated in all policies at all levels and at all stages, by the actors normally involved in policy-making."[4]

The European Commission on the other hand articulates gender mainstreaming, in its glossary of terms for equality between women and men, as:

The systemic integration of the respective situations, priorities and needs of women and men in all policies and with a view to promoting equality between women and men and mobilising all general policies and measures specifically for the purpose of achieving equality by actively and openly taking into account, at the planning stage, their effects on the respective situations of women and men in implementation, monitoring and evaluation[5].

The central common theme in these definitions is the notion that gender equality issues are relevant in all areas of policy making (Verloo 2001) and an appeal to the state to subsequently act upon it as a transversal policy objective. This diagnosis of the gender equality problem, which places responsibility on the *state*, to assess its own policy, owes its conceptual origins to feminist theory and activism particularly in the development NGOs (Jahan 1995:19, Woodward 2001: 14). These perspectives on gender inequality emerged over many years as feminist theory moved from monolithic conceptions of patriarchy to more complex theorisations of gender and its social construction.

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[4] Group of Specialists on Mainstreaming, Council of Europe, (2004) Conceptual Framework, Methodology and Presentation of Good Practices: 12.

[5] Director-General for Employment, Industrial Relations and Social Affairs, Unit V/D.5, (1998) One Hundred Words for Equality: a glossary of terms for equality between women and men, European Union, European Commission: 57.

Theorising Gender

Feminist political science (FPS) and feminist policy analysis (FPA) have in the last 40 years been marked by a gradual movement from women and politics to the dominance of gender as a central analytical concept in feminist research (Beckwith 2005, Childs and Krook 2006, Hawkesworth 1997, Kenney 1996, Lovenduski 1998). Early FPS sought to criticise the discipline's exclusion of *women* as political actors. This body of work in turn challenged fundamental assumptions of the discipline, such as the public/private distinction, expanding the discipline to include women's activities in conceptions of political life and to recognise the politics within them (Lovenduski 1998: 334, Phillips 1998). Building on this critique, feminist researchers thus also sought to 'add' women to the discipline, generating more knowledge on women's political lives, participation and interests.

In the 80s and 90s however, developments in feminist theory led to a focus on *gender* and politics, encompassing further critiques of existing methods in political research, new research problematiques, and examination of the gendered nature of political institutions and processes (Beckwith 2005, Childs and Krook 2006: 20, Hawkesworth 1997, Phillips 1998, Randall 2002). Two key research agendas have evolved from these theoretical insights. Firstly, gender scholars have subsequently argued that gendered meanings can be observed structuring interpretations, values, conventions and practices in multiple fields (Beckwith 2005: 91, Connell 2002, Scott 1986: 1067). Secondly, literature has emphasised how perceptions of the sexes and the relations between them, are not fixed or natural, rather being fluid and constantly subject to local renegotiation (Acker 2006, Connell 2009).

Originally a grammatical term used in the field of linguistics (Hawkesworth 1997: 650), feminists borrowed the word gender to describe 'the entirely social creation of

ideas about appropriate roles for women and men [and] the exclusively social origins of the subjective identities of men and women', as well as the relational nature of perceptions of masculine and feminine (Scott 1986: 1054). The concept thus enabled feminists to move away from biologically determinist explanations of inequality.

Initial uses of the gender concept highlighted cultural and historical variations in these social constructions (Hawkesworth 1997, Scott 1986). Scott's (1986) influential essay discussing the use of gender as an analytical category however, developed a more systematic conception of gender and power, arguing that gendered meanings are heavily implicated in the distribution of power with her oft cited definition; 'gender is a constitutive element of social relationships based on perceived differences between the sexes and … is a primary way of signifying representations of power (Scott 1986: 1067). Her essay argued that gender operates in multiple fields including culturally available symbols, normative concepts that set forth interpretations of the meaning of symbols, social institutions and subjective identity. Thus, gendered meanings can be found structuring values, conventions and practices (Beckwith 2005: 191, Connell 2002: 98, Scott 1986: 1067) so that the perceived meaning of activities, prima face unconnected to relations between women and men, are frequently ascribed gendered meaning.

Dualistic, relationally defined pairs have been identified as a key marker in this symbolic ordering (Harding 1986: 23, Scott 1986: 1067): hard/soft, reason/emotion, mind/body. In each case the meaning of each concept is defined in opposition to the other and the component associated with masculinity is ascribed higher value (Harding 1986: 23). First described as Othering by de Beauvoir (1997: 16-21) the relationship between these dualistic categories has been debated in terms of

opposition, complementarity and exclusivity. On the whole, theorists have argued that the appearance of exclusivity, symmetry and complementarity dissolves on close inspection. Butler for example sees gendered meanings as *a*ssymetrical opposites. Whilst these pairs may seem prima face to be oppositional binaries, she argues they are in fact 'ontologically impossible to inhabit (1990: 146 in Hawkesworth 1997) because human's characteristics are continuously variable. Beckwith on the other hand characterises masculinity and femininity as 'the outer boundaries of constellations of meanings that are politically contextualized and constructed' and which are not mutually exclusive (Beckwith 2005: 131). Subsequently, the concept of gender has been developed and re-specified producing further terminology distinguishing different aspects of its operation in ever greater precision, with terms such as gender identity, gendered divisions of labour, gendered social relations and gender symbolism (Hawkesworth 1997: 682).

These theoretical developments have led to an empirical and theoretical focus on the processes of gender*ing* and the processes through which notions of masculinity and femininity are renegotiated, redefined and reified through social interaction (Beckwith 2005: 131, Butler 1990: 24, Connell 1987: 139, Harding 1986: 17, West and Zimmerman 1987: 126). These questions have been tackled on different levels of abstraction within FPS, FPA and feminist sociology.

Harding (1986) differentiates between three distinct cultural processes producing gendered social life: assigning dualistic gender metaphors to various perceived dichotomies that rarely have anything to do with sex differences (gender symbolism); appealing to these gender dualisms to organize social activity and dividing necessary social activities between different social groups of humans (gender structure); and the social construction of individual identity only

imperfectly correlated with either the reality or the perception of sex differences (individual gender) (Harding 1986:17-18). Referring to slightly more tangible structures in society, theorists such as Connell and Walby have described systems of social and political structures and practices constituting gender inequalities. Walby's (1990) work identifies both public and private patriarchal structures and changes in gender relations in the UK. Her analysis argues that gender relations have shifted from private to public forms of patriarchy (1990: 201). Connell, on the other hand identifies power relations, production relations, emotional relations and symbolic relations (Connell 2002) as interlocking processes constituting gender.

The levels or domains described by theorists thus vary,[6] but their shared analytical contribution is a focus on gender as a *structurally* produced attribution of meaning, rather than a product of natural difference or individuals' characteristics, and on the complex interconnection between different fields or domains.

Producing Gender Inequality: State Policy

FPS and FPA and FOS (Feminist Organisational Sociology) have provided detailed examples of how these meanings are played out in and produced by the state's role in the construction of gender inequality. Early FPA evidenced explicit and de jure discrimination against women in laws pertaining to fields such as marriage, property and taxation, and citizenship (Lovenduski 1986, Kaplan 1992). More recent examinations however have illustrated how nominally neutral policies

[6] Connell (2002) describes a gender regime as pertaining to a particular institution or organisation, and describes the wider patterns in society as a gender order composed of these gender regimes. She identifies four dimensions of gender relations; power, production, emotional and symbolic relations. Walby (2004) on the other hand identifies four levels of abstraction in the gender regime of a state, each of which has four *levels* and different dimensions.

produce and reinforce gender inequality through both disparate treatment and disparate impact (Hawkesworth 1994: 110). Many such studies have focused on the welfare state, pointing out how paternalistic and patriarchal policy assumptions are often embedded in policies (Fraser 1989, Nelson 1984, Sainsbury 1996, 1999, Sapiro 1986), systematically accruing privileges to men and disadvantage to women. Fraser (1989) discussed two-tier benefits systems in the United States reinforcing men's autonomy and self-reliance, and women's subordination and dependence (see also Orloff 1996, 1997). Her analysis illustrated how citizens conforming to ideals of full time uninterrupted workforce participation, receive 'first tier' welfare assistance and are treated as individual rights bearers entitled to uniform cash benefits. Second tier recipients, working part time or on an interrupted basis, on the other hand, are viewed as household members, subjected to variable levels of benefit, surveillance and stigmatizing application processes. Other critical studies have also commented on the classification of welfare programmes predominantly used by women as 'redistributive', when public expenditure through commerce, transportation, agriculture and research and development, which disproportionately benefit and support men, goes un-stigmatised (Sapiro 1986, Newman 1994 in Hawkesworth 1997:107). These examples show state bias towards the service of men's needs over women's.

FPA has also, however, highlighted how assumptions or normative notions about the roles of the sexes have been enforced across policy areas as diverse as individual sexuality, macro economic policy, migration, employment advice and militarism (Caglar 2010, Connelll 1990, Duerst-Lahti and Kelly 1995, Htun 2005, Freeman 1982, Hawkesworth 1994, Ostendorf 2004, Stivers 1993, Lovenduski 1998, Schwenken and Eberhardt 2010). Helga Ostendorf's investigation of the German state's vocational career advisory services for example, found advisors routinely pushing female school leavers into poorly paid jobs with no prospects for advancement, on the

assumption that girls should first establish a family, before seeking a (part-time) career which would enable them to prioritise raising a family (2004: 122-123). Many female school leavers were thus advised to undertake training for occupations which do not provide a living wage, or opportunities for advancement and where employment opportunities are limited (e.g seamstress, shop assistant, nanny).

Other examples have demonstrated gender roles that can not only be enforced by the state, but also instrumentalised in its policy (Caglar 2007, Woehl 2011). Caglar (2007) for example discusses how the World Bank's macro economic policy assumed and exploited a distinction between the sexes and their economic behaviour. Her analysis found World Bank policy conceived of males as the classic self-interested homo economicus, whilst viewing women as altruistic mother-workers whose expenditure can be expected to flow to the children/family. World Bank policy thus sought to instrumentalise and exploit this assumption, promoting women's workforce participation in developing countries as a means to invest in the development of the future workforce (Caglar 2004: 69), and not as a means to women's economic advancement or the pursuit of gender equality.

Finally, FPA has identified policies inappropriately treating the sexes the same, finding officially 'gender-neutral' or 'equal opportunity' policy may fail to serve women's needs in circumstances where women cannot conform to masculinist expectations or criteria. Orloff (1996, 1997) for example identified the failure of welfare policies to recognise and respond to the differing reasons constituting women's poverty, in the continuation of women's economic disadvantage. Similar patterns whereby 'gender blind' policies exacerbate existing inequalities or disadvantaging women have been found in other policy domains such as science policy and divorce law (Weitzman 1985, Zippel 2011).

These ideas form the rationale and problem diagnosis underpinning the GM policy: it problematises these gendered and gendering assumptions within state policy (Rees 2005: 558) and compels implementers to take gender into account at all stages of policy planning and implementation in all departments (the 'mainstream'). Thus implemented, organisations and governments undertaking GM would identify and eradicate gender blindness and gender biases in their policies, in all areas, representing a significant shift in the actions and workings of the state and a powerful transformative (Squires 2005, Rees 2005) impetus for change in gender relations.

Reproducing Hierarchies: Gendered and Gendering Processes within the State

Feminist theory has indicated however that the state is not only involved in the production of gender inequality through its externally facing policies. Research has also examined the internal workings of the state, including bureaucracies, legislatures and the executive, as gendered and gendering systems. These studies provide a more micro perspective on the processes through which notions of masculinity and femininity are negotiated and defined through social interaction (Beckwith 2005: 131, Butler 1990: 24, Connell 1987: 139, Harding 1986: 17, West and Zimmerman 1987: 126) and show how they affect access to power and status, within the state itself.

Research seeking to identify factors constituting the low number of female representatives in parliament for example, have identified the role of gendered criteria in party selectors' notions of the ideal candidate, which disadvantage women (Chapman 1993, Kenny 2009, Lovenduski and Norris 1989, 1995, Randall

1989) reducing women's chances of winning a nomination to fight for a parliamentary seat and potentially enter parliamentary politics. These factors serve to keep women out of politics all together. Investigations within parliament in turn have shown how gendered norms and masculinist behaviour patterns hinder women's political advancement and impact once they hold office (Lovenduski 1999, 2001, Mackay 2004, Puwar 2003, Shaw 2000).

Kathlene (1995) for example presents a fine-grained statistical analysis of male legislators' behaviour toward female colleagues in parliamentary committees showing they take a more aggressive, critical and undermining approach dealing with colleagues of the opposite sex. These patterns of behaviour included for example calling expert female witnesses by their first names and males by their title (e.g. Dr) and surname, interrupting female colleagues more than male colleagues and querying women's contributions more aggressively (Kathlene 1995: 169). Annesley and Gains (2010) on the other hand review how the disposition of the executive affects the resources and relationships available to women to push through 'feminist' policies. Their review shows how male dominated networks and gendered patterns in allocation of ministerial posts clustering women in 'house-keeping' and unpaid ministerial roles, effectively keep women out of positions which would equip them with resources and access to the most powerful policy networks in government.

FOS has also made a significant contribution in this area, similarly illustrating how the status of groups and individuals are constructed through organisational processes which attribute merit and autonomy and thus construct the gendered (and racialised) experience of individuals working within bureaucracies or government. These practices include divisions of labour, allocations of space, pay,

hours of work and so forth, which constituted gendered disparities in power, opportunities, security and benefits and other benefits and rewards (Acker 1990, 2006, Halford and Leonard 2001, Mills and Tacred 1992, Stivers 2002). Such overt decisions and procedures construct gendered power hierarchies within organisations (Acker 1992: 568) including the state and the supra state.

These examples thus reveal four insights. They show how gendered meanings and relationships, which are systematically reproduced in both formal and informal systematic practices, affect women's access to resources and power within the state. They also depict the state as a differentiated entity composed of complex agencies where gender is enacted differently (Acker 2006, Connell 2006: 436, see also 1987, Chappell 2002, Mackay et al 2010: 2, Watson 1990). By extension, they similarly highlight the potential for change, depicting the gendered arrangements, or the gender regime, of an organisation (Acker 2006, Connell 1987) as local and particular, comprised of fluid and constantly renegotiated practices, rules and norms (Duerst Lahti and Kelly 1995:32).

Gendered Images in the State: Legitimacy, Appropriateness and Neutrality

Finally FPS/FOS scholars have explored the mutually legitimating relationship between gender inequality and the state itself. This work has explored how wider gendered hierarchies are legitimised by the state and how gendered images are involved in discourses legitimating state action. Stivers' (1993, 2002) analysis of the arguments used to justify and legitimate public administration in the United States for example, uncovered systematic reproduction of gendered meanings in the self-image of state institutions. Stivers argues that these gendered images are rooted in traditional understandings of the public sphere which perceives it as a male

preserve *defined in opposition* to the domestic realm as the life space and responsibility of women (1993: 4).

Her analysis thus argues that although this boundary is maintained in classic liberalism to prevent tyranny, it also functions to stabilise the subordination of women because the legitimacy and viability of the liberal state thus conceived, is systematically dependent upon both the preclusion of any political attention to (or intervention in) the domestic realm and the household's supply of shelter, food, clothing, child bearing and rearing (1993:4). Stivers further argues that the public sector can only continue as it does because women bear a disproportionate share of domestic functions. The public realm thus conceived is therefore founded on a paradox: the state *depends* on the household and the services it provides, but is resultantly reluctant to *acknowledge* the political relevance of domestic issues and possibly disrupt the status quo. It describes women as citizens whilst maintaining a reality which subordinates them, limiting their public participation and refusing to engage in their concerns related to 'the domestic realm' constituted in opposition to the public one.

Stivers finds images of this paradox permeating multiple every day practices in the institution she examines, highlighting three key interrelated aspects. Persistent exclusion of concerns associated with the domestic; reliance on this division for legitimation; and a highly gendered ideal of 'neutrality'. Thus in the attribution of work and merit, for example, Stivers finds notions differentiating work considered suitable for men from that for women, functioning as 'commonsense'. These are further coupled with assumptions that privilege 'men's' work and devalue 'women's'.

Stivers also notes how images of 'expertise' and 'experts', largely reliant on notions of objectivity, rationality and scientific and technical knowledge, play a key role in constructing public administration's authority. In practice, however this 'neutrality' is the partial viewpoint of privileged males, detached from the domestic realm and from the marginalised groups in society ascribed menial tasks. The exclusion of these groups and their experiences accounts for the coherence of this view and its apparent universality (1993: 37-42). Those unable to identify with this viewpoint risk being branded passionate, sentimental or biased, qualities associated with femininity.

Other scholars have similarly examined the presence and deployment of gendered images in state institutions and organisations, focusing on several phenomena including: local discourses supporting and naturalising gendered and gendering practices; boundary work demarcating the political from the non-political; and the role of 'neutrality' within them (Acker 2006: 452, Chappell 2003, 2006, Fraser 1989, Kulawik 2009, Lovenduski 1998). Chappell (2002, 2006) examining Australian and Canadian bureaucracies, within a feminist new institutionalist approach, for example, focuses on bureaucratic 'norms', specifically 'the logic of appropriateness' and its gendered implications. Her comparative research highlights how bureaucratic ideals of neutrality bar 'femocrats' from advocacy or gendering of policy because such actions explicitly defend the interests of particular groups. Acker (2006: 452) and Connell (2006) on the other hand highlight discourses naturalising women's inequality through management speak, whilst Lovenduski (1998: 340) describes how women's lives and political interests are often under-conceptualised and oversimplified by bureaucrats, or simply unknown.

Gender and the State: The Research Agenda

Feminist research and theory has thus moved from a focus on women in politics to a complex conception of the state as a powerful locus in the production of gender inequality, and the institutionalisation and regulation of gender (Bacchi 2004, Bacchi and Eveline 2010:40, Connell 1990: 529, Rees 2005, Sauer 2005, Woehl 2011). These perspectives conceive of gender as a process or a practice, where masculinity and femininity, roles, status and privilege are constantly renegotiated and redefined through interactions. FPS thus increasingly focuses on identifying and revealing 'the institutionalised advantages and disadvantages', the 'ways of valuing and doing things' (Duerst Lahti and Kelly 1995: in Mackay 2004) and the masculinist ideologies which are 'central to the working of public institutions and therefore political life, conventionally defined' (Lovenduski 1998:340 in Mackay 2004).

These dynamic and fluid conceptions of gender, which present gender relations as complex and contingent, varying from site to site and over time (Acker 1992, Beckwith 2005, Cockburn 1985, 1991, Connell 2002, Witz and Savage 1992), present feminist research with two challenges however. Firstly, they have proven difficult to operationalise (Lovenduski 1998, 2005, Mackay 2004) in empirical research, prompting calls for new and innovative conceptual tools (Chappel 2006, Childs and Krook 2006:24, Mackay et al 2010: 9, Sauer 2005: 86) which can grapple with the different levels and dynamics identified. Secondly, they imply the possibility for change. Thus far however, both our understanding of change, and our ability to account for the stability of gender in institutions of the state, remain under-developed (Doelling 2005, Mackay et al 2010: 10, Mazey 2000, Meier and Celis 2010, Sauer 2005: 86, Schofield and Goodwin 2006, Zalewski 2010).

This thesis argues that GM provides an opportunity to respond to both these challenges, developing our understanding of change and providing an opportunity to operationalise complex theories of gender more fully. As GM constitutes an instance where the gendering assumptions and practices identified by FPS, FPA and FOS are challenged, it provides a moment where the processes maintaining them are made more visible – we can ask what happens when pre-existing gender blindness or gender bias is challenged? How do gender issues remain de-politicised?

For the most part however, examination of GM implementation has not yet fully exploited these opportunities for theoretical development. Most often research on GM has taken a macro-level perspective, highlighting important empirical outcomes and providing an essential basis for this piece of research. It has largely not engaged with the processes through which gender inequality is perpetuated and produced within the state though. The following section reviews this existing research on GM, highlighting key themes and the insights it has produced, which we can built upon to understand mechanisms of resistance and change in gender relations with greater depth.

GM Policy Development and International Rhetorical Uptake

After being developed in non-governmental organisations during the 1970s and 1980s (Carney 2002; 19, Walby 2007:453) the GM policy was adopted as a centrepiece policy in the UN Platform for Action, following the United Nations Fourth World Conference on Women in Beijing (1995). Subsequent to this very high level rhetorical legitimation and extensive lobbying from gender equality activists, GM was adopted by the majority of states and in many international and

supranational organisations (Keck and Sikkink 1999, True and Mintrom 2001: 30). Early research on GM marvelled at the breadth and speed of its uptake in the late 90s. A key theme within in this body of research is discussion of whether and how new, shared, gender equality norms, had emerged at an international level.

Carrying out a statistical 'event history analysis' across 157 Nation States from 1975 to 1998, True and Mintrom (2001) examined the factors which drove the uptake of GM found in over 100 of their sample. Their findings indicated the single most significant factor was the presence and participation of transnational women's NGOs arguing the relevance of gender/women's interests across a range of policy areas (True and Mintrom: 51). These women's groups and NGOS had lobbied extensively to persuade states and organisations of the relevance of gender or women's interests in multiple fields of policy (True and Mintrom 2001: 51).

This focus on the role of transnational feminist NGOs and the expertise and pressure they brought to bear in the international arena, has been similarly identified by other scholars examining GM adoption in supra-national organisations, who identified new tactics and patterns in feminist political participation and impact, observing their successful interaction with powerful supranational institutions such as the EU, the UN, the World Bank or the Organisation for Security and Co-operation in Europe (Carney 2002, Guenther 2007, Hafner-Burton and Pollack 2000, Keck and Sikkink 1999, Zalewski 2010).

Within the EU, this phenomenon has been similarly examined using different theoretical and empirical techniques, focusing on the transfer of EU gender equality norms to the nation state level. Here, scholars have pointed out the extensive efforts

of the EU to place GM and the pursuit of gender equality at the centre of an EU policy agenda (Mazey 2002, Rubery 2003, Behning and Serrano Pascual 2001) and an EU identity (Macrae 2010). These scholars pointed out the very significant commitments to gender equality, which the EU has undertaken (see Figure 1-1), which include enshrining the establishment of gender equality as one of the EU's objectives in the Treaty of Amsterdam, commitments to mainstream gender into all policy in the 1996 Communication on mainstreaming equal opportunities into all policy areas, and placing equality of opportunity and the reconciliation of work and family at the heart of the EU's Lisbon and Luxemburg employment strategies.

Figure 1-1 : EU Landmark Commitments to Gender Equality

1957	• Treaty of Rome 1957 equal pay for equal work
1976	• Defrenne II judgement recognises direct effect of the principle of equal pay extending application to collective paid labour agreements
1994	• Council of Ministers identifies equal opportunities as a priority at Essen Summit
1995	• Group of EC Commissioners on equal opportunities established • Intra-service Group on equal opportunities established • Council Resolution on equal opportunities in Development Cooperation
1996	• Commission Communication on mainstreaming equal opportunities into all policy areas • Council Resolution on equal opportunities and Structural Funds
1997	• Inter-service group on equal opportunities agrees Strategy Paper • Parliamentary Resolution endorsing Mainstreaming Communication • Articles 2 and 3 of the Treaty of Amsterdam establishes the equality of opportunity as *one of the EU's objectives*; • Articles 13 and 141 enable the undertaking of measures to be taken against discrimination and provide a legal basis for action

	(drawing on the *Kalanke and Marshall* case rulings in the European Court of Justice); • Luxembourg Employment includes equal opportunities as on of the 4 pillars • Group of 29 'mainstreaming officials' designated • Parliamentary resolution establishing a European campaign for zero tolerance of violence against women
1998	• Austrian Presidency identifies equal opportunities as a priority • Commission proposal for Council Regulation on mainstreaming in development policy
1999	• Commission Communication on Women and Science
2000	• 2000 Charter of Fundamental Rights of the EU Article II-23 stating 'equality between women must be ensured in *all areas* including employment, work and pay.'
2001	• Parliamentary Resolution on equal pay for work of equal value
2004	• Regulation on promoting gender equality in development cooperation • Directive on equal treatment between women and men in access to and supply of goods and services
2006	• European Council adopts European Pact for Gender Equality
2007	• European Year of Equal Opportunities for All

(Sources: Rees 2002:50, Directorate General for Internal Policies of the Union 2007)

This research also develops the focus on processes and lobbying leading to the adoption of GM however, by examining the multi-layered EU polity and GM 'trickle down' within it. Analyses drawing on social constructivist approaches in international relations (IR) have examined how and to what degree, new EU gender equality norms were formally 'empowered' at the Member State level, or how domestic gender equality policies were 'Europeanized' (Caporaso and Jupille 2001, Borzel and Risse 2000, Leibert 2001, Wobbe 2003), focusing on marco-scale change in gender equality 'norms' characterised by changes in strategic national policy within

the domestic arena (Caporaso and Jupillie 2001, Boerzel and Risse 2000), legal precedents (Wobbe 2003) and institutional machinery. Starting from an assumption of state sovereignty, this research responds to the 'puzzle' of domestic adaptation to an EU influence.

This strand of research on GM highlights then, how *external* actors lobbied international organisations and states to engage on gender issues. It reveals empirical shifts in the way states and international organisations acknowledge gender issues in their policy since the 1990s and points to an increased acceptance of the relevance of gender. The findings highlight that this has been driven by feminist NGOs, i.e non-state actors, who have pushed for an adoption of their perspective on gender issues as relevant and legitimate targets for state policy, in all areas. Thus, this strand of research has explored chains of political pressure between NGOs, international organisations and states. It stops short however of a close analysis of implementation of GM or its impact, instead focusing entirely on formal commitments and policy architecture, as indicators of norm change.

Gender Mainstreaming: A Closer Look

Analyses which have focused more closely on policy after formal adoption, have shown a persistent pattern of disappointing outcomes (Bretherton 2001, Daly 2005, Mazey 2000, Woehl 2012). Whilst on the surface it may seem that new international 'norms' of gender equality have been adopted, the extent of their practical empowerment has been called into question extensively. Research focusing on GM in the European Commission has shown that the policy's impact within EU institutions and policies themselves, has not matched the very extensive commitments to mainstream gender and the constitutionalisation of gender equality as an aim, in the Treaty of Amsterdam (see above). Bretherton for example, found

the European Parliament strongly emphasising the need to integrate GM in the accession process, in view of the declining status of women in central and eastern European states (2001: 60). Despite these commitments however, European Parliamentary reports have repeatedly found that GM has been ineffectively implemented (2001: 61). Indeed, Bretherton's documentary analysis found repeated sentences urging attention to 'equal opportunities' as a distinct area of policy (2001: 70) in papers documenting the accession process, but no meaningful identification of gender equality issues in mainstream policy areas. Bretherton argues that ideas supportive of GM have 'remained outside the mainstream' and have 'struggled against the 'tide' of … deeply embedded practices and norms supportive of male dominance (Bretherton 2001: 73). Similarly, Lombardo (2005) and Stratigaki (2004) found that GM was often adopted only in a form which was complementary to existing mainstream policy aims.

This pattern is borne out in analysis of other international organisations. Examining the EU, the World Bank and the UNDP (United Nations Development Programme) and the OSCE (Organisation for Security and Cooperation in Europe), Hafner-Burton and Pollack (2000) found significant discrepancies in how commitments to GM were actually acted upon by the international organisations which had so quickly adopted the policy. Whilst some organisations in their sample had undertaken actions under the guise of GM, material change was negligible in others. Drawing on social movement theory, they emphasised the agency of NGO actors in getting GM onto an organisation's agenda, arguing the importance of external lobbyists' skill in 'constructing resonance' between INGOs concepts of gender equality and the pre-existing aims of an organisation. Their analysis also highlighted an additional factor however: where an organisation could easily control implementation *and* where 'resonance' had been constructed, GM commitments were translated into action. When implementation structures were

weak however, or where an organisation's aims appeared to conflict with ideals of gender equality, commitments to implement GM remained rhetorical only.

These findings therefore highlight two interrelated dynamics in GM implementation which point to a gap between the theory and the reality of GM. Firstly, rhetorical commitments are frequently not put into action. Secondly, when 'GM' is undertaken, evidence suggests lobbyists re-package it into the service of pre-existing aims. Perhaps indicative of the need to locally 'repackage GM', analyses which have examined GM policy content more deeply have uncovered a bewildering array of differing activities named 'gender mainstreaming', indicating that GM has taken on a multitude of meanings and forms (Daly 2005, Rees 2002, Mazey 2000, Verloo 2007).

Gender Mainstreaming: Theory and Reality

Understanding Local Varieties of Gender Mainstreaming and Theorising Change

A significant proportion of research on GM has therefore sought to understand these confusing outcomes and their implications, honing in on change and how GM might achieve it. Typologies highlighting the intended impact of GM, as conceived by feminist theorists and activists, in comparison to pre-existing gender equality policy strategies, have made a useful contribution to this effort. To this end Jahan (1999), Rees (1998) and Squires (1999, 2000, 2005) have produced typologies which contrast GM with pre-existing gender equality policy strategies. Whilst the precise terminology used in each differs, referring to them helps us to understand the probable meaning of empirical realities which GM implementation has yielded. Figure 1-2 below reproduces one example, which has been applied and commented on by several scholars, (Rees, 2002, Verloo 2005) for discussion.

Figure 1-2 : Gender Equality Policy Strategies

	Typical Equality Policy	Gender Perspective	Feminist Theoretical Commitments
Inclusion Strategy	Equal opportunities	Equality	Liberal
Reversal Strategy	Positive action	Difference	Radical
Displacement Strategy	Gender mainstreaming	Diversity	Post-modern

Adapted from Squires 2005

The first policy strategy described above 'inclusion', identifies discrimination as the cause of women's exclusion from whichever field, politics or work for example. Inclusion policies typically might take action to outlaw such discrimination. Such policies make no comment on the systems or world which women will subsequently be included in. The second ideal type identified in Squire's typology 'reversal', is founded by contrast on the recognition of existing gender differences and is usually composed of actions, to include previously excluded groups, such as quotas. Such 'reversal' policies seek to respect and incorporate difference into the social world on an equal standing, changing the values and inclusion criteria of the status quo in the process. Both of these to a large extent, target women, either directly, or by enabling changes in their behaviour.

'Displacement' policies, the third and final ideal type however, target the state. They explicitly respond to a conception of gender as socially constructed and the

identification of the genderedness of systems as the mechanism of women's disadvantage (Rees 2002: 46). Implementing GM as conceived on the basis of these ideas, therefore denotes a structural analysis of gender inequality which problematises the state's role in creating it and its interaction with the social arena around it - 'identifying how existing systems and structures cause indirect discrimination and altering or redesigning them as appropriate' (Rees 2002). Implementing GM thus involves a wholesale challenge to the assumptions in government and would constitute a powerful tool displacing gender inequality.

Gender Mainstreaming in Practice

Empirical research documenting the movement of GM from the feminist imagination into practice in the state, has however illustrated an incomplete transfer of these ideas. Results show that on the whole, GM has not been implemented as a displacement policy and the requisite conceptualisation of the gender inequality problem and the state's role in its production has not passed wholesale into action. Some states have in fact adopted GM in name only, whilst others have adopted a diluted idea of gender inequality as a structural problem.

The EQUAPOL project (Daly 2005) for example undertook a comparative analysis of eight EU countries claiming to implement GM and found significant differences in the depth and breadth with which the structural conception of gender inequality was acted upon. Their analysis included the development of a 3-fold typology depicting this and the differing strategies through which GM was 'horizontally' driven: decentralisation, transversalism and the integrated approach.

The integrated approach, found only in Nordic states entailed all policy actors taking responsibility for gender equality, globally, across all policy areas. The other responses represented 'hybrid' versions of GM. Here, prior equality policies such as positive action and equal opportunities were part of new 'GM' policy. Decentralisation comprised revisions to anti-discrimination legislation to involve all public bodies, expansion of positive action measures and selective efforts to introduce gender mainstreaming. Transversalism on the other hand, involved the identification at a national strategic level, of different targets in relation to gender equality across different policy areas.

Overall, EQUAPOL found that GM adoption has resulted in a widening of gender equality policy action, into new 'mainstream' areas. However, with the exception of the integrated approach found in Nordic countries such as Sweden, these models of GM indicated an absence of the structural conception of gender inequality, which theoretically distinguishes GM from previous policy. Instead, states had frequently remodelled GM as a mode of *delivery*, rather than a new understanding of the *problematique* (Daly 2005: 443). This also means the conceptual work of identifying state contribution to gender inequality problems, theoretically assigned to all staff in all areas in GM, has largely not occurred. The extensions of anti discrimination legislation, found in the 'decentralisation' model, require little self-reflection for state departments or organisations. Transversal models similarly imply little reflection or policy learning - implementers are simply required to respond to isolated local gender equality goals which have been identified centrally.

Using a wholly different methodology the MAGEEQ project undertook a large-scale comparative analysis of GM policies in EU states using critical policy frame analysis (Verloo 2007). These analyses examined how policies conceptualised the gender

equality policy problem[7] using a method drawing on broadly discursive methods such as Carol Bacchi's (1999) 'what's the problem' approach. This kind of analysis provides a very sophisticated depiction of the variations in how gender equality and gender mainstreaming is constructed in different states. Echoing the findings of Hafner-Burton and Pollack (2000), their results showed that the aim of policies entitled 'gender mainstreaming' varied very widely indeed whilst also illustrating that conceptually weak elaborations of gender equality issues were widespread. Indeed, many states' GM policies exhibited low consciousness of gender inequality issues, replication of gender bias, internal contradictions and poorly elaborated actions which would deliver little change (Verloo 2007).

Comparing findings across this body of research, a strong pattern emerges whereby GM is infrequently implemented in the manner envisaged by NGOs who formulated the policy and where strong rhetorical commitments often evaporate into negligible implementation. Much in the existing body of research directs our attention to the loss of the 'structural' conception of the gender inequality problem and a re-interpretation of the gender equality issue, which matches the ideas previously in place within an organisation.

The MAGEEQ and EQUAPOL projects show this conceptual drift in written state level policies. Examples from the EU and other international organisations however, emphasise that commitments to GM in written policy (whatever they may be) may not translate into action, suggesting problems moving the full content of

[7] In terms such as: who the problem affects and how; who is deemed culpable; and how ameliorative actions would work; and who should undertaken them (see Verloo 2007).

GM into the sphere of implementation – indeed in Hafner Burton and Pollack's case study, strength of implementation mechanisms was highlighted as a very important factor in effective GM implementation. None of the studies thus far cited however, have closely examined the processes whereby rhetorical commitments are moved into implementation.[8] This represents a significant gap in our understanding, what happens to the radical potential of GM in practice in implementation?

Examining the Policy Process: Construction and Implementation

The findings of studies which have examined policy implementation processes in closer detail, provide some clues as to the dynamics involved in hobbling GM. On the whole, these point to structural constraints on changes to local perceptions of the gender equality policy problem.

Some scholars have pointed out that the horizontal strategy of GM clashes with pre-existing policy practices which function on the assumption of vertically segregated policy areas (Behning and Serrano Pascual 2001, Bruno et al, Beveridge and Nott 2002, Jacquot 2009), concluding that both the transversal nature of the policy and the 'soft' accountability measures used to implement it (Bruno et al, 2005, Jacquot 2010, Pollack and Hafner-Burton 2010) account for its limited impact. Pollack and Hafner-Burton (2010) in particular hone in on incentive structures, arguing that a lack of effective rewards or penalties account for the policy's limited enactment. Whilst the horizontal nature of GM undoubtedly is a challenge to its implementation, these analyses pay insufficient attention to the gendered nature of GM policy and of the state and important differences between the application of

[8] The MAGEEQ project excluded implementation documents (Verloo 2004:9).

standard policies and GM - FPS, FPA and FOA tell us that gender is reproduced in multiple processes within the state and GM implementation, targeting these as it does, represents a very particular kind of meta policy.

Studies looking more closely at the gendered specifics of limitations in/to the GM implementation, supply more detailed insights. These investigations have uncovered problems of unintelligibility. Sometimes this took the form of incomprehension and uncertainty over exactly what GM would entail, when ordinary staff were charged with acting on the new gender agenda (Andresen and Doelling 2005, Schmidt 2005). Schmidt's analysis of the EU Commission investigated the degree to which GM was 'institutionalised', finding that whilst the policy was institutionalised in the form of gender apparatus (units, internal experts etc.), its implementation was also characterised by widespread lip-service. Indeed understandings of what GM meant varied significantly throughout the Commission (2005: 176) and it was often the subject of some uncertainty. Interviewees also often openly expressed the view that women's policy needs were unknown (2005: 176, 211, 221). That this constitutes a tacitly accepted policy position is of significant interest.

Bilton's (2005) analysis of GM implementation in the Scottish executive similarly found a lack of understanding as to what mainstreaming gender would actually *mean* (2005: 175). Her findings showed that once GM proceeded from strategic declarations of intent to actual implementation, the policy became trapped in a process of reinvention, where the energies of gender specialists and mainstream staff were repeatedly diverted into efforts to create a meaningful collective understanding of what GM might in fact mean, diverting resources from actual implementation. Her analysis found a fundamental conflict between gendered

ways of knowing and mainstream perceptions of issues, underpinning this process (2005: 218).

Whilst both these investigations highlight unintelligibility or (institutionally acceptable) 'unknowns' as barriers, other studies have documented explicit resistance to the adoption of newly gendered policy when external gender experts are drafted in to identify actions (Acker 2000, Andresen and Doelling 2005, Benschop and Verloo 2006, Connell 2006, Ely and Meyerson 2000). Several of these studies document the assertions of those challenged with GM implementation that gender inequality is a problem *elsewhere* (Andresen and Doelling 2005, Benschop and Verloo 2006, Connell 2006). The details of these assertions are of considerable interest.

Andresen and Doelling, Benschop and Verloo, and Connell all find that institutionalised gender blindness plays a significant role in these tendencies. This gender blindness was underpinned by several ideas *shared* by actors within the institutions, which belied normative views on the acceptable or preferable behaviour of individuals (Andresen and Doelling 2005, Benschop and Verloo 2006, Doelling 2005, Connell 2000: 445, Meier 2006: 188). These shared meanings encompassed conceptualisations of the individual, and expectations of their behaviour.

Connell's analysis of gendered change in state organisation (2006), for example, showed how local management practices restricted the meanings which could be locally applied to GM. In her case study, an attitude of 'gender neutrality' was underpinned by a weltanschauung which conceptualised people as individuals with

(free) choices and preferences. Through this lense, staff understood gender issues in terms of personal choices relating to workforce participation, accompanied by a attitude of 'neutrality' or non-judgement towards them (2006: 448). Within this framework of meanings, gender is conceptualised as an issue of individuals' free choice, a phenomenon located 'elsewhere'.

Schofield and Goodwin (2006) and Benschop and Verloo's (2006) case studies on the other hand, highlight local micro-political dynamics which render such meanings powerful. Schofield and Goodwin illustrated how the domination of one group (men) in management was normalised within their case study, so that their interests were popularly regarded as those of the majority (2006: 32). This collective understanding of the organisation's agenda thus also included the exclusion of women's interests and went largely unchallenged and therefore unproblematised. Benschop and Verloo's study of GM projects in the Belgian public sector, similarly showed how the views of (male) management exerted dominance and excluded competing perceptions. Here, feminist experts drafted in to support GM implementation reported 'self-censoring', translating critiques on the genderedness of organisations or criticisms of low levels of gender expertise, into 'familiar or ambivalent (gender neutral) terms to link up with the regular actors' frames of reference' (2006: 30). Whilst this compromise maintained their participation in the GM implementation project, it significantly hampered meaningful critique or change.

Self censorship in identifying or articulating instances of discrimination or sexism has also been documented in GM implementation studies in Germany. Andresen and Doelling (2005) and Doelling (2005)'s examination of GM implementation during a bureaucratic management reform, found that staff articulated views that

strongly opposed GM at the same time as they articulated strong commitment to equality. Surprisingly, female staff articulating these views nonetheless identified sexist treatment and practices disadvantaging women when researchers interviewed them. They did not however express these views to colleagues (Doelling 2005: 179). Doelling's findings indicated that raising these concerns clashed with mutually accepted assumptions on the attribution of merit and fairness. These included an assertion that gender discrimination should play no role in the organisation. Secondly, assessments of employees merits, and by extension attribution of hierarchical advancement and rewards, were based *entirely* on an abstracted quantification of output, rather than quality, efficiencies, management time served or staff satisfaction etc. Thus, somewhat tautologically, arguing that employment practices which discriminated against women and privileged men should be altered, constituted making allowances on the grounds of sex – explicitly contravening the collective assumption, that gender discrimination should be strictly avoided.

Referring to Bourdieu's concepts of praxis and field, Doelling argues these locally accepted assumptions, which they labelled 'the universal code' (Doelling 2005: 54), constituted the interpretative repertoire that actors in the organisation could refer to in order to speak to one another - the only mutually intelligible language that an actor could deploy when negotiating their position or action in the organisation. This code constituted an important element of the micro politics of the organisation, where different people in the organisation were positioned with more or less freedom or resources to support or refute the relevance of gender within the workplace, or to argue for their own personal interests (Doelling 2005:171).

Each of these latter analyses then point out how GM implementation is hampered by the gender blindness that it, in theory, seeks to displace. In each of these examples, the interpretative repertoires that were *shared* within institutions rendered GM inappropriate or unintelligible. These shared meanings hide and/or legitimate the exclusion of women's interests. Andresen and Doelling, Doelling and Schofield, and Goodwin's studies begin to illustrate how powerful these meanings are – they structure the language an actor must use to communicate and advance within the workplace.

Re-conceptualising GM and Change

These disappointing outcomes have led some scholars to argue that our theoretical understandings of GM are under developed. Two critiques are here advanced. One argues that the methodological approaches thus far used, may be obscuring the actual processes underway when GM is adopted and implemented (Benschop and Verloo 2006: 31, Meier 2006: 185, Sauer 2005: 86). Others have argued that the processes through which GM could achieve change have only been fuzzily theorised within the policy itself (Daly 2005, Mazey 2000, Squires 2005).

Indeed, one conceptual stumbling block, which can be observed in existing literature on GM, is an overly rigid conception of policy. Much research to date focuses on the conceptual drift or 'evaporation' of GM, implicitly viewing policy as a fixed entity that can be expected to travel mimetically between states and organisations, and which is usually implemented in accordance with rhetorical commitments made. This assumption is not found in other fields of policy analysis, however (Parsons 1995:13, Pressman and Wildavsky 1973, Sabatier 1986, Sabatier and Mazmanian 2008), and limits our findings to assessments of failure. It does not enable us to engage with the complex processes through which the state reproduces

gender inequality, which existing theoretical literature in FPS, FPA and FOA has developed (Acker 1990, Annesley and Gains 2010, Chappell 2002, 2006, Connell 2006, Lovenduski 1998, Mills and Tancred 1992, Stivers 1993), and which GM in theory seeks to disrupt.

The gender equality policy typologies, on the other hand, which identify and conceptualise change, take us some distance by highlighting how GM, compared to pre-existing policies represents a more fundamental challenge to basic/underlying policy assumptions. These commentaries single GM out as a research site to develop our understanding of change in gender and the state, but the precise relationship between the gendered images and practices within organisations identified in FPS and FOA (Acker 1990, Annesley and Gains 2010, Chappell 2002, 2006, Connell 2006, Lovenduski 1998, Mills and Tancred 1992, Stivers 1993) and gendered policy outputs, is not systematically described. Our understandings of how these might be displaced, therefore, constitute a gap in our knowledge.

Findings of the micro studies of GM implementation (Andresen and Doelling 2005, Benschop and Verloo 2006, Connell 2006, Meier 2006, Schofield and Goodwin 2006) reviewed here provide clear suggestions on where to start such an investigation. They show that the genderedness of organisations, in terms of practices, images and hierarchies, constitutes a major barrier to GM implementation, and they begin to highlight some of the mechanisms of resistance involved. This leads some authors to suggest that GM should be conceptualised as a process of contestation (Benschop and Verloo 2006), where the processes holding gender blindness and gender bias in place are challenged during GM implementation.

Using concepts from policy studies (Colebatch 2009, Pressman and Wildavsky 1984, Yanow 1993, 2008) STS/SK (Latour and Callon 1981, Law 1986, 2003, Sinclair 2000, Latour 2005, Lendvai and Stubbs 2006) and marrying it with the concept of gender knowledge (Andresen and Doelling 2002, Caglar 2010, Cavaghan 2010, Cavaghan 2012, Doelling 2005), this thesis develops this perspective. These literatures provide an existing body of work, which conceptualises all policy, from the rhetorical to the implementation stages, as a process of contestation and negotiation, and most importantly coordination. These perspectives have highlighted how policy is always interpreted through pre-existing practices in a collective process, as well as the dynamics through which competing perspectives are marginalised. The gender knowledge concept provides a framework to identify the gendered assumptions at play in these processes. Applying these concepts to an analysis of GM implementation, therefore, entails examining existing day to day practices through which GM is understood and implemented and thus bridges the gap between the genderedness of organisations and of policy outputs. This approach builds on Benschop and Verloo's (2006) assertion that we should conceptualise GM as a process of contestation, marrying it with the foci suggested by the findings of other recent GM implementation studies which have highlighted how important *shared* working practices and ways of thinking are in rendering gender 'irrelevant' or unintelligible (Andresen and Doelling 2005, Bilton 2005 Connell 2006, Schofield and Goodwin 2006).

Such an analysis thus enables us to recognise the processes through which gender or women's interests are excluded by day-to-day policy practices and how they assert themselves when confronted with pressure to mainstream gender. In essence therefore, this approach highlights GM as a moment where an attempt is being made to render the gender politics of the state explicit and to contest them, and where resistance is characterised by an attempt to continue suppressing this,

significantly furthering our understanding of how gender relations are maintained and could be changed within the state. Chapter Two introduces and defines the key concepts in this approach, and discusses its added value in depth.

2

Chapter Two Analysing GM as a Knowledge Process: Key Concepts and Theoretical Approach

Defining Policy

In Chapter One I made two interrelated arguments. First I argued that we must operationalise gender more thoroughly, taking account of its function within state structures and policy and the relationship between the two. Secondly I argued for a re-conceptualisation of GM as a process through which gender bias and gender blindness are contested, stating a need for a method which can reveal how they are held in place in an organisation, and by corollary, how they are challenged when GM is implemented. Such an approach must seriously engage with the relationship between an organisation, its pre-existing practices, and its policy. Reviewing existing literature on GM, I argued that much research has hitherto tacitly adopted a rigid definition of GM, based on an underdeveloped concept of policy. This has hindered our understanding of GM's impact and workings, and prevents us from fully operationalising our understanding of gender as a process, which operates on multiple levels within the state. In this chapter I draw together concepts and perspectives from implementation analysis, Interpretive Policy Analysis (IPA), Science and Techonolgy Studies (STS) and the Sociology of Knowledge (SK) to develop an analysis using the concept of gender knowledge to respond to this challenge. Each of these literatures supplies useful insights which have not thus far been drawn together.

First I introduce research examining the policy process, which includes both the examination of implementation, and IPA approaches to policy analysis. These literatures extend their conception of policy beyond 'stated, intended action', to instead engage with the fluidity of meaning in policy. I explain how these approaches move our focus onto the processes through which shared perceptions of policy problems are accomplished, or not, and the problems associated with efforts to coordinate action around them. Exploring how IPA analysts have operationalised these perspectives I review two key conceptual tool kits: framing or frame analysis, and knowledge.

Discussing framing I highlight how helpful frame analysis has been for the analysis of gender equality as a policy problem in the MAGEEQ project (Verloo 2007). I argue that it provides a framework to identify the most important aspects for consideration when examining conceptions of gender inequality in policy, which effectively builds on Feminist Policy Analysis (FPA) and incorporates gender theory.

This chapter asserts that the concept of knowledge provides significant advantages for our research puzzle because, whilst it also focuses on issue representation, it enables us to capture local processes through which shared understandings of policy problems are achieved and coordinated *in action* (Cavaghan 2010). To demonstrate this, I first review IPA literature which has used the knowledge concept, showing that it provides analytical purchase on how policy is understood 'on the ground', in action, and how it links local pre-existing assumptions to locally adopted interpretations of policy. This literature thus provides a perspective, which enables us to link the operation of gender within institutions/organisations and policy.

I then present the very small body of work which uses the analytical concept of gender knowledge. Here, I demonstrate how the gender knowledge concept can be used to identify both gender bias and gender blindness in organisations and to highlight some of the power dynamics at play. This grasp of power dynamics can be improved by reference to STS/SK approaches, which can supply more detailed perspectives on the processes leading to the institutionalisation of gender knowledge. Three points are key here: 1) a conception of knowledge as the outcome of a collective process; 2) emphasis on the epistemic characteristic of knowledge; and 3) attention to the material forms which knowledge takes, such as text or speech.

Meaning and Process

Although policy analysis is a highly diverse field, two broad strands can be delineated: analysis of policy's efficacy and analysis of the policy *process* (Colebatch 2009:5, Hill 2005:5, Parsons 1995: 54). The former has often been marked by positivist or managerial approaches which tackle policy problems in a rationalistic and technocratic manner. This research has often focused on policy outputs and outcomes, assessing their effectiveness against a policy's stated aims (Colebatch 2009: 5, Hill 2005: 4, Jenkins Smith 1990:11) or has tried to improve the (rationalistically conceived) knowledge used in the policy process (Parsons 1995:38). Much of this research relies on an intuitive definition of policy as stated, intended action (Colebatch 2009: 15, Parsons 1995:13). Some of the existing commentaries of GM's shortcomings, reviewed in Chapter One, bear tacit hallmarks of these top down, rationalistic approaches to policy analysis and this intuitive definition of policy (e.g. Hafner Burton and Pollack 2008, Daly 2007).

Two key critiques have been advanced against this, by IPA scholars focusing on the policy process. *Interpretive* policy analysts (IPA) have challenged the implicit assumption in managerial/rationalistic approaches to policy analysis, that policy problems are clear or uncontested. Instead, they have heavily emphasised the political and contested nature of problem identification and definition (Benford and Snow 2000, Colebatch 2009:33, Fischer and Forrester 1993, Rein and Schoen 1993, Yanow 1996). These authors have analysed policy content, highlighting differences between competing interpretations of policy problems. These have contributed much to our understanding of the complex ways in which policies nominally tackling the same problem can, in fact, markedly diverge in terms of perspective, actions, instruments and ideology (Benford and Snow 2000, Hoppe 1993, Morth 2000, Rein and Schoen 1993, Verloo 2005). This vein of scholarship therefore recognises meaning and problem definition, and the struggles involved in controlling them, as central foci for attention in the examination of policy.

Secondly, critics have argued that managerial and rationalist assessments of policy's efficacy have often paid insufficient attention to many aspects of the real business of public policy, such as the almost inevitable occurrence of both unintended actions and consequences, when policy is implemented. These authors have argued that such phenomena should not simply be viewed as failures or disappointing aberrations from stated goals, but rather as a de facto facet of policy. This therefore implies an active engagement with implementation processes and outcomes as a central part of policy analysis (Parsons 1995:13, Pressman and Wildavsky 1973, Sabatier 1986, Sabatier and Mazmanian 2008).

Analysing Issue Representation and Policy Conflicts: Framing

IPA scholars have developed theoretical tools to enable analysis of how meaning is made and transformed in policy, mapping phases of the process including 'initial' decision making and problem definition, through to subsequent implementation including unintended consequences and actions (Hill 2005:5, Parsons 1995:20). These tools include concepts like narratives (Kaplan 2003), metaphors (Yanow 2000:41) and myths (Hajer 2003) which are often deployed in tandem with attention to the instruments or types of policy intervention which have been used, which can vary from regulatory control to research support (Fischer 2003:55).

Frame analysis or framing (Bacchi 1999, Benford and Snow 2000, Laws and Rein 2003, Morth 2000, Rein and Schoen 1993) has been one of the most widely used approaches in IPA, with researchers applying it to highlight how differently competing actors understand policy problems, in areas as diverse as defence policy, gender equality policy, early retirement and ethnicity in policy (Morth 2000, Verloo 2005, Rein and Schoen 1993, Hoppe 1993). Consequent to this popularity, the term has been used differently by different scholars (Laws and Rein 2003:179). Each however, has emphasised an analysis of the 'architecture' of issue representation, to draw out differences and enable meaningful comparison between competing view points at play in policy contests (Laws and Rein 2003, Yanow 2003). Benford and Snow's influential analysis of social movements' lobbying activities identified four key aspects of problem representation as a basic structure for analysis: problem diagnosis, attribution of responsibility, prognosis and motivation (2000:614) and emphasised fram*ing* as a collective processes of meaning negotiation.

Drawing on this 'architecture' and on Bacchi's (1999) 'what's the problem' approach to the analysis of gendered policy problems, the MAGEEQ project developed a 'critical frame analysis' approach to pioneer a comparative study of meaning in GM, examining GM policies in terms of diagnosis and prognosis of the policy problem, and the roles and voice attributed to various actors (Verloo 2005:26). Resting on a thorough understanding of gender theory (gendered social categories, identity, norms and behaviour, gendered structures such as labour, citizenship, intimate relationships, gendered mechanisms such as distribution or resources, norms on gender and the legitimisation of violence, intersectionality and so forth) and FPA (Verloo 2005:24) the MAGEEQ project emphasised a structural conception of the gender inequality problem as the fundamental difference between GM and other gender equality policy tools (Verloo 2005:23).

Analysing speeches and policy documents from national level policy contests in six European Union States, the project highlighted the diversity in conceptions of the gender equality policy issue amongst EU states, subsequent to the EU's promotion of GM and the gender equality ideal. Meier et al (2005) for example examined national debates on women's representation in decision making to examine whether their content matched their expectations of a GM influenced policy perspective (Meier et al 2005:36). Their findings illustrated that this was largely not the case. Women were often represented as 'the problem' and structural understandings of women's exclusion from decision making were usually absent (Meier et al 2005:60). Krizsan et al (2005) on the other hand, used this approach to document competing representations of domestic violence in the Netherlands, Hungary and the EU. Their findings included frequent recourse to gender-neutral language, and diagnoses of domestic violence locating the problem in dysfunctional families, rather than structural inequalities between the sexes. Thus using frame analysis, MAGEEQ examined state policies in (clearly) gendered areas,

to assess whether this structural analysis of gender inequality, characteristic of 'successfully' gender mainstreamed policy, was present in mainstream policy, finding for the most part, that they were not.

The MAGEEQ method therefore provides several important insights and avenues for development. In line with the perspectives asserted by IPA scholars, results of the MAGEEQ study on GM underscore the importance and fluidity of problem definition (Benford and Snow 2000, Colebatch 2009:33, Fischer and Forrester 1993, Rein and Schoen 1993, Yanow 1996) and operationalises a less rigid concept of policy than many other studies of GM have displayed. Its findings thoroughly evidence the potential for policy meanings to be renegotiated once they travel from promotional platforms such as the EU or the UN to actual states, and underscore the importance of these phenomena with regard to gender equality policy and GM. In theoretical and methodological terms the approach therefore supplies an extremely useful gendered framework to analyse the content of policy, which this thesis will drawn on to structure its own analysis of how the gender equality policy problem is perceived in DGR (see Chapter Three). Furthermore, it analyses gendered meanings in mainstream policy. This approach thus pioneered analysis of GM which begins to operationalise gender as an ever present structuring and meaning, as described in feminist theory and which engages with the potential for these meanings to change.

Problem Representation in Implementation

MAGEEQ's analysis of meaning restricted itself to the macro political level, examining formal policy such as speeches, strategy or position papers. Focusing on this kind of documents excludes policy's subsequent travel into 'street-level' implementation and the unpredictable outcomes and actions which

implementation scholars have appealed to us to include (Parsons 1995:13, Pressman and Wildavsky 1973, Sabatier 1986, Sabatier and Mazmanian 2008). Literature on implementation argues that we cannot assume that meanings are fixed once policies are passed on to implementers.

One reason is a pragmatic awareness of the lack of clarity, which is often observable in written policy, and its consequences. As a result of initial clashes within political institutions, unclear policies containing contradictions or compromises often emerge from political institutions (Hill 2005:180). This leaves implementers with significantly more discretion and decision-making powers than a top-down, rationalistic notion of policy tends to assume. In fact, many assessments of policy implementation have shown how allegedly clear policies, are altered when put into action, sometimes beyond recognition (Parsons 1995: 465, Majone and Wildavsky 1979). These findings tally with the results of empirical assessments of GM, which found written commitments to GM policy are often ignored or reinterpreted (Bretherton 2001, Lombardo 2005, Stratigaki 2004).

Secondly, implementation analysts have argued that individual policies cannot be considered as discrete phenomena. Rather, they argue that any policy inevitably interacts with any others, which implementers may also be in charge of. This impact can exert itself in the form of local perceptions of acceptable policy action, available resources, expertise or information (Freeman 2006, Friedman 2008: 487, Schoen 1973:101, Heclo 1974, Hill 2005:21, March and Olson 2008). These scholars thus emphasise that policy is always implemented in a context, and that it usually differs from that in which political actors devised or negotiated policy decisions. Organisations or bureaucracies implementing policy usually have their own perspective, pre-existing structures and practices, and competing policies. Policy

dictates, especially when they are unclear, are therefore understood through the filters of these pre-existing organisational practices and characteristics. These contain logics of decision making, values, criteria of effectiveness and hierarchies, which are themselves more fluid and less stable than policy makers often tacitly assume (Newman 2008, Newman and Clarke 2008, Lendvai and Stubbs 2006).

On this basis, implementation scholars have argued that policy should not be considered as a top down process, rather conceiving of it as an evolutionary one (Brown and Wildavsky 1987, Pressman and Wildavsky 1973, Sabatier 1986), where attempts are made to move new ideas, themselves fluid and mutable, into new environments and into action. Where policies are particularly innovative, such as GM, this process represents 'a battle for broad and complex transformation' (Schoen 1973: 101).

This position therefore asserts that these processes of interpretation must not be excluded from analysis and that we should strive to understand how they occur, as argued by Colebatch, who emphasises the collective dynamics and complexity, which this involves. 'Policy must not simply be understood in terms of officially proclaimed goals, but in terms of the way activity among a wide range of participants is patterned so that people know what is going to happen' (2009:15).

This understanding of policy enables us to meaningfully apply the feminist theoretical insight that the state's actions are variously and locally patterned with gender bias, into an analysis of GM implementation. It enables us to operationalise existing perspectives on the state production of gender inequality as a process (Connell 1990:509). It raises the questions: how are pre-existing policies and the

gender biases embedded within them coordinated? Similarly, we can consider how GM commitments are moved from legislation or policy statements into implementation. Such an analysis thus considers what 'ways of doing things' simultaneously provide the context for GM and constitute its target. In this light, one of the limitations of the MAGEEQ frame approach becomes clear. Structuring analysis using the concept of a policy frame splits meanings off from the local structures generating them - the same structures shown in feminist theory to constitute gender in organisations (Acker 1990, Connell 1987, Duerst-Lahti and Kelly 1995). To undertake this kind of analysis of meaning in context, we therefore require conceptual tools, which mesh analysis of problem representation in policy 'in action' with the processes providing the context for, and constituting it.

A Knowledge Based Approach: Examining Local Interpretations of Policy

IPA approaches using the concepts of *knowledge* and understanding engage with policy in this manner. Rather than examining policy on paper, these approaches emphasise that policy should be analysed as it is *understood* and subsequently undertaken (Johnstone 2000, Wagenaar 2004, Wagenaar and Cook 2003, Lendvai and Stubbs 2006, Laws and Rein 2003). The following sections review some of the different approaches taken in such analysis, drawing out their methods and the premises they can supply for an analysis of GM implementation. Following this, I introduce the concept of gender knowledge and the small literature which has already used the concept.

Each of these IPA approaches examining knowledge and understanding highlight the necessity for implementers to translate often abstract received policy commitments into workable meanings, which are intelligible in local context.

Yanow's analyses using the concept of '*local knowledge*' for example illustrate how understandings of policy vary according to the location and role of different participants in the process (Yanow 1993, 2000:26). For example, one of Yanow's empirical case studies illustrated how Israeli policy makers located in urban areas established a network of community centres with the aim of national identity building. Noticing however that residents did not use them, urban policy makers considered closing the centres. Rural residents however, understood the centres' presence quite differently, as prestigious buildings which showed urban commitment to the rural development of villages. Residents thus fought to maintain the centres, even though they were seriously under used. Staff within the centres on the ground found themselves trying to negotiate between these two substantially different perspectives and find a sustainable role for the centre. Yanow thus argues that mismatch between written policy and actual implementation usually presents itself within the community implementing and being acted upon by any policy. She therefore argues that understanding policy outputs and outcomes requires an analytical awareness of the inevitable multi-vocality in policy implementation (Yanow 1993:65) where multiple communities of meaning emerge sharing the same or differing interpretations of a policy (Yanow 2000:10).

Rather than examining written policy texts Yanow therefore uses artefacts, interviews and observation to examine how various participants and audiences *understand* a policy, emphasising the symbols and practices which policy participants describe and partake in. These methods enable an engagement with policy as it is known and undertaken, and in terms which are closely linked to action, rather than the knowledge within written policy, which is often characterised by a vague and abstracted perspective.

Whilst Yanow's analysis portrays these processes emerging organically however, several other scholars have emphasised the work of individuals in translating policy into existing local collective repertoires in order to create intelligible working meanings. In his example of the implementation of new immigration rules Wagenaar provides a detailed explanation of the thought processes which an individual must go through to put a policy into action.

Wagenaar emphasises how in the daily reality of practice, 'rules interact with other rules' and how action is improvised and non-teleological (Wagenaar 2004: 646). Faced for example with a group of 56 Slovenians seeking entry into the country, the immigration administrator refers to her knowledge of Schengen Agreement and the Dublin Agreement. These supply rules and categories she must apply to deal with immigrants, so that she assesses whether the persons entered through an external border; from within the EU; or after a failed application elsewhere. For the administrator each of these factors affects an entrant's right to 'quick' decision making procedure, or not; whether or not, they will be granted access to the country; and thus whether or not, she must find accommodation for them whilst their application is processed.

This web of rules constitutes the situation, which the administrator has to react to. They structure how she understands '56 Slovenians'. Developing this point further Wagenaar importantly argues that the rationale underpinning this course of thought inevitably differs starkly from that driving a policy's creation. Whilst a new immigration policy may seek to speed up processing times by introducing a 'quick procedure' before allowing immigrants to enter the country, implementers have to reinterpret rules within restricted resources and a short term perspective. In Wagenaar's case, new procedures, which entitle immigrants to 'quick decision' lead

amongst other things, to the establishment of a legal 'limbo land' at the airport where immigrants awaiting 'quick decisions' were housed. The new task of accommodating immigrants therefore constituted the major impact of the new policy. Thus, the desired outcome of the creators of any discrete rule or policy played little role in her action. In this case these pre-existing constraints and rules form the pre-existing meanings and categories which the immigration administrator must translate new policy into and also react to.

Translating Between Contexts and Communities

These two knowledge based policy analyses illustrate how policy is understood and how meanings are constituted in context. Yanow's example portrays a more emotional/social context and Wagenaar's a very technical one. Others, however, have developed an awareness of contextually generated meaning and the multi-vocality it can generate in order to trace and emphasise the difficulties in moving ideas across policy contexts. Rather than focusing on how policy is understood once it is 'received', these studies have shown how differing ways of knowing can clash, creating difficulties in communication and barriers to action within the policy environment. These perspectives have explored the consequences of these clashes and how 'ways of knowing' become institutionalised.

Multiple analyses of expert natural or social scientific knowledge use in policy have illustrated the difficulties in moving expert knowledge, developed in social science, into public policy and state action. Early knowledge utilisation literature puzzled over social scientific knowledge's lack of impact on actual policy (Caplan 1979, Lindblom/Cohen 1979, Lindquist 1990, Weiss 1980). Whilst some early analyses focusing on knowledge argued the quality of research affected its uptake, others quickly began to consider cultural and epistemic factors, identifying cultural

differences between the scientific community and the policy community as a barrier to communication between the two communities (Caplan (1979, see also Lachenmann 1994).

Laws and Rein's (2003) analysis of interaction between local government and residents protesting against a local chemical waste plant, highlights the relevance of these kinds of cultural differences in an examination of how competing parties thought about a chemical waste plant located near a residential area. Analysis of the policy frames articulated by residents and by local government showed very clear fundamental differences in their perceptions of the policy problem in terms of problem diagnosis, prognosis, and attribution of responsibility. Laws and Rein looked even more closely however at the dynamics underpinning this clash. For example their findings indicated that scientifically trained local government staff discounted protesting residents' assertions that their health was suffering on account of the chemical waste plant near their homes, because they were based upon the protesters' own lived experience as residents. Instead local government officials made their assessments in terms of scientifically established measurements of risk. Unstructured personal experience did not feature in their professional thinking. Thus they would not engage with activists' reports of health problems such as asthma, skin rashes or reproductive disorders, even though their own profession was actually unable to supply any data at all on health risks associated with the plant.

Laws and Rein argue these scientific ways of thinking were institutionalised. They refer to Bourdieu's concept of practice as 'taken for granted assumptions that provide a self evident foundation on which action can proceed' (Bourdieu 1977:164 in Laws and Rein 2003: 179), to argue that knowledge that did not fit into the

categories which comprised the local government scientists' practice, was rejected by local government.

Johnstone applies a similar logic, arguing for an analysis which emphasises and captures the institutionalised way people understand policy problems. In addition, however, he also emphasises how particular aims may be embedded within specific ways of knowing. Analysing the NATO Security Council's deliberations over intervention in Kosovo, Johnstone argues that texts are always filtered through a context comprised of the field of practice and the purposes of the enterprise in which the interpreter is participating (Johnstone 2000:189-190). In contrast to Yanow's emphasis on multi-vocality however, his analysis examines the impact of one 'interpretative community' – the discipline of law. In this case, Johnstone argues that the text of NATO's policy decision can only be understood if considered in the same terms of thought, which predominated in the legal community at the time. Here, anxieties about creating new legal precedents eroding national sovereignty were acute (Johnstone 2000:189). In an argument similar to Laws and Rein's, Johnstone argues in his case study that the legal profession provided the 'assumptions, categories of understanding and stipulations of relevance and irrelevance that are embedded in a particular practice or enterprise' (Fish 1899:14 in Johnstone 2005:189). In this case, the collectively held assumptions of plausibility and legality in the legal profession constituted the predominant interpretative framework through which political tensions had to be articulated. This contextual knowledge, legal 'know-how', supplied the 'conventions of description, argument, judgement and persuasion' which actors in the Security Council referred to in order to resolve a dispute. Legally trained individuals bound by these professional conventions thus become professional interpreters of political will into shared legal discourse. On account of the legal framework's role in structuring international

rules, considerable effort during negotiations went into formulating a legal response which would *not* disrupt existing legal precedents.

Using the concept of knowledge to structure an investigation of policy, therefore maintains a focus on meaning and interpretation. In contrast to framing, it focuses on policy as *understood in action*. The examples reviewed provide several insights into the dynamics constituting these understandings. Yanow (2000, 1993) and Wagenaar trace how policy is understood when it is translated into context. Yanow emphasises physical or social surroundings and how they affect locally held symbolic understandings of a policy's meaning and aims. Wagenaar (2004), on the other hand, highlights pre-existing rules and the mental work involved in translating policy into workable action. Laws and Rein (2003) and Johnstone (2000) in turn take a more abstract perspective to examine the role of institutionalised ways of knowing. Both authors show how ways of knowing (including 'know how') affect the adoption/rejection of i*nformation*.

Applying such an analysis to GM we could look at the established ways of thinking about gender dominating within an institution. Rather than trying to establish how GM policy is 'framed', we can examine how gender and gender inequality is perceived and understood, or not, within mainstream policy in action; operationalising the insights of existing gender theory (Acker 1990, Stivers 1993) which have shown how gendered meanings operate, often implicitly, in many aspects of mainstream practice. Two theoretical steps remain, however, to enable us to operationalise such an investigation. We need a defined framework to analyse and spot gendered meanings, gender bias and gender blindness, and a better understanding of how knowledge and ways of knowing become institutionalised.

Introducing Gender Knowledge

The concept of *gender knowledge* addresses our first analytical need. Gender knowledge has already been used as an analytical driver in a handful of studies on gendered assumptions in policy (Caglar 2010, Schwenken and Eberhardt 2010) and GM implementation (Andresen and Doelling 2005, Cavaghan 2012, Doelling 2005).

The concept was originally formulated by Andresen and Doelling (2005) and Doelling (2005) in a one-off analysis of GM implementation during managerial reform in a German bureaucracy. Their analysis showed the promise of a knowledge based approach to examine GM implementation, whilst leaving a number of areas which could be further developed to provide a more robust analysis. Andresen and Doelling defined gender knowledge as '*different kinds of collective knowledge, which circulate and exist in society about the difference between the sexes, the reasoning of the self-evidence and evidence of these differences, the prevalent ideas about the correct gender relations and divisions of labour between women and men*' (Andresen and Doelling 2005:175 own translation). In the broadest sense, analysing gender knowledge therefore means examining how people understand gender relations, whether these take the form of explicit commentary or implicit assumptions and beliefs.

Drawing on Acker's (1991) observations of gendering practices in organisations, Andresen and Doelling (2005) eschewed an analysis of written policy and instead sought to examine whether pre-existing gendered job evaluations and appraisal procedures, were being disrupted by GM within the managerial reform process. Using interviews, Andresen and Doelling examined what staff said about gender, gender inequality, GM and the reasoning behind their statements. Their analysis

indicated that institutional dynamics hampered the implementation of an 'effective' GM policy - gender knowledge which viewed women's lifestyles and qualities as choices that hampered their effectiveness, dominated.

Interviews showed interviewees reporting institutional values that all staff should be and were treated equally and that 'gender does not matter here' (Andresen and Doellig 2005:177). All staff demonstrated a knowledge of abstract political commitments to gender parity and argued that gender based discrimination was illegitimate (Doelling 2005). They also described differences between the sexes based on anecdote, noticing differences in behaviours or lifestyles and referring to gendered stereotypes and notions of biology to describe their experiences and colleagues. Their knowledge did not include an understanding of structural inequality or social or political reasons for differences between men and women's lives however (Andersen and Doelling 2005:177/178). Merit and hierarchy within the organisation was viewed in terms of economic and managerial competence and new appraisal procedures valued an individualised and 'pushy' mentality (*Ellenbogenmentalitaet,* literally 'elbow mentality') and devalued team work and personnel management (Andresen and Doelling 2005:172).

Female staff recognised patterns of organisational behaviour or attitudes which disadvantaged them, noting for example that new assessment procedures were labelling women as hesitant or lacking tenacity, and that women with caring responsibilities were experiencing difficulties progressing in the organisation (Andresen and Doelling 2005: 177). They did not however, articulate this as relevant to GM implementation or as a target for institutional change.

Andresen and Doelling argued the institutional notion of equality as one of 'all staff are treated equally' implied a non-recognition of people's subjective position and experiences. This expressed itself in the organisation's appraisal practices so that women's caring responsibilities were not viewed by (male) leaders as a structural constraint placed on an individual but rather simply as an individual shortcoming (2005:178) for which 'allowance' should not be made. Despite recognising this as disadvantageous, female staff did not articulate opposition. Instead, they tried to accommodate themselves to local rules and practices, seeking advancement on these terms.

Drawing their concept of gender knowledge together with Bourdieu's notions of *field* and *habitus,* Andresen and Doelling argue that the interpretive repertoires and categories of managerial (male) staff within the organisation formed the web of meanings within which more junior staff had to operate and perform. As neither the management reform nor GM disrupted this division of roles in forming meanings and responding to them, gendering practices and gendered hierarchies remained largely undisrupted, because of the continued dominance of masculine managerial meaning making. Andresen and Doelling thus argue that we must understand this gender knowledge, not as something held by individuals, which can be unlearned, but as inherently linked to the context in which it is known and expressed (Andresen and Doelling 2005:181)

Developing a Gender Knowledge Analysis

Andresen and Doelling's analysis links gender, meaning, policy, organisations and power, providing a useful starting point for a deeper analysis of GM implementation. There are however, areas where we can strengthen and broaden our analysis using the concept of gender knowledge.

Andresen and Doelling used gender knowledge as an analytical category to pinpoint *shared* gendered assumptions embedded *in practice*, such as concepts of merit and conceptions of equality. Furthermore, they argued that these shared categories and interpretations are the products of micro political struggles (2005:173) where autonomy to define issues is not equally distributed - higher level staff can create categories and meanings, and can distribute rewards according to them. Lower level staff, on the other hand, have a reactive relationship to meanings, negotiating their own position and advancement according to them. Although some staff are likely to find these meanings easier to conform to than others, responding and acting within them may potentially be rewarded, whilst challenging them will not.

Secondly, their analysis highlights an interesting disjuncture between explicit and implicit knowledge. In the case examined, staff argue that 'gender does not matter here', whilst simultaneously reporting differences between the sexes which cause women to be valued less. In addition, practices within the organisation *do* ascribe meaning to women's lives – women's tendency to hold caring responsibilities were viewed simultaneously as irrelevant and as limiting their professional commitment. Thus, collectively held explicit and implicit gender knowledge strongly contradicted each other. Explicitly, all staff are equal. Implicitly, women behaving as women are generally recognised to live, cannot expect to be rewarded and promoted within the workplace.

This disjuncture between proclaimed commitment to inequality and the continued existence of gendering/gendered practices mirrors widespread findings from multiple GM implementation studies, which have highlighted the problematic

continuation of gender blindness (Benschop and Verloo 2006, Doelling 2005, Connell 2006) in organisations proclaiming commitment to GM.

We can build further on these findings however, to separate analysis of gender blindness and gender bias/gendering practices, by fully exploiting the focus on evidence and rationale (Cavaghan 2010: 18) which is contained within the gender knowledge definition. On the most basic level the definition of gender knowledge supplied by Andresen and Doelling focuses on perceptions of relations between the two sexes, thus capturing perceptions of gender relations and normative positions on these.

Developing our analysis of the evidence and rationale underpinning this knowledge, brings the distinction between gender blindness, that is the mechanisms through which gender is rendered irrelevant or implicit, and gender bias, the gendered meanings, which disadvantage or marginalise women, into sharper relief. Focusing on what kinds of information and thinking comprise and underpin these perceptions, we can explicitly elaborate the relationship between the two and to investigate the potentially differing mechanisms which could disrupt either. This thesis builds on existing findings to suggest that the maintenance of gender blindness is an important mechanism of resistance in GM implementation, and that investigating the dynamics perpetuating it should form a significant component in any understanding of the potential for change (Cavaghan 2012), a point discussed in the next section which engages more closely with STS/SK approaches to knowledge analysis.

Furthermore, structuring our interrogation of these perceptions with reference to the MAGEEQ framework, would result in a more comprehensive template with which to structure analysis of gender knowledge. Referring to the MAGEEQ template we can flesh out our assessment of perceptions of relationships between the sexes to ensure that we capture the (non) problematisation of gender inequality as a policy problem.

In addition, several elements of this analysis could however be better evidenced. Andresen and Doelling's analysis makes an argument about how power and hierarchy influence intelligible perceptions within an organisation and how they are resistant to challenge. Exactly how this occurs however is not empirically evidenced. The relationship between the gender knowledge articulated by staff; the dominant local practices which brand women's caring responsibilities as personal choice/short coming, is described but not specifically demonstrated. Finally, whilst Andresen and Doelling's analysis looks closely at gendered meanings in the implementing organisation, it makes no reference to the policy implementation efforts driving GM. What were the 'official' sources of the GM reform undertaken in this instance, and how did they arrive at the bureaucracy in question? What methods of control or monitoring were deployed to enforce the policy? How, referring back to Colebatch's conception of policy as the coordination of action, was action coordinated around the GM policy?

STS/SSK Approaches to Knowledge Analysis

The gender knowledge concept thus demonstrates considerable promise. The IPA approaches surveyed so far have demonstrated how we can analyse meaning in action and have highlighted the importance of contestation. These IPA approaches

thus illuminate the relationship between intelligible meanings, action, the individual and the community of actors where policy is undertaken. This helps us understand the movement or translation of policy from paper to action. Analysing gender knowledge on the other hand provides a framework to analyse how gender inequality is perceived or not within an organisation and suggests the power dynamics holding it in place. Neither literatures, however, attempt to evidence processes of institutionalisation or power dynamics involved. We still require further conceptual tools to capture the fine-grained processes that constitute gendered meanings and contribute to their persistence. To enable this final step in conceptual development, I draw on STS and SK literatures. These have honed in more precisely on the micro-processes and power dynamics which render some knowledge and ways of knowing dominant, and others marginal.

Encompassing a broader research field than just policy, science and technology studies and the sociology of knowledge (STS/SK) have discussed, in greater detail than the studies thus far reviewed, the properties and definition of knowledge itself and the collective processes governing the emergence of knowledge. Based on the assumption that any given instance of knowledge is not 'fact' but rather a representation, one of an infinite number of possible interpretations (Callon, Law and Rip 1986, Haas 1992:4, Latour 1986), much STS/SK, particularly Actor Network Theory ANT (Callon 1999, Latour and Callon 1981, Law 1986, 2003), has focused closely on how some interpretations become accepted whilst others become obscure. In turn these approaches have considered the effect and impact of these outcomes.

Scholars in this vein have studied efforts to control and restrict interpretations of problems and representations of reality, the central focus of their analysis, in a

more direct way than IPA, highlighting the way in which knowledge and facts are produced through the displacement and suppression of dissenting voices or facts (Gebhardt 1987 in Lendvai and Stubbs 2006:5). In doing so, SK/STS has developed a conceptualisation of knowledge which explicitly emphasises the collective power dynamics involved in knowing, and the restrictions which established practices and ways of knowing can place on individual expression in organisations.

In addition to extrapolating these processes, the literature supplies concepts to sharpen our grasp of the mechanics of representation and the analysis of evidence. These concepts help us capture and describe the ways in which issues are marked as irrelevant or relevant. In empirical terms, the literature also describes the material and social processes which constitute the popularisation, institutionalisation or marginalisation of knowledge.

Representation and Boundary Work

Knowledge is the product of some method of thinking or seeing which assigns a meaning to phenomena (Law 2003:2). The relevance of these ways of thinking were identified earlier in the reviews of work by authors such as Wagenaar (2004), Johnstone (2000), and Laws and Rein (2003). STS/SK approaches have focused more closely however on the *mechanics* of representation and their relationship to communities of meaning and epistemic practice.

This literature argues that most often, representation and interpretation involves simplification – whereby much 'extraneous' information is excluded. Geographical maps for example are usually produced in accordance with (now) established topological/geographical practices (longitude, latitude, uniform scale etc). This

adherence to standard practices, makes reading these standardised representations of nature straightforward for those educated in their codes. Many physical or biological sciences on the other hand, glean their knowledge not from nature, but from experiments, and the processes of interpreting results and generalising or extrapolating from them to wider phenomena. 'Bleeding, screaming rats are quickly dispatched. What is extracted from them is a tiny set of figures. This extraction …*is all that counts'* (Latour 1990:40).

This process of sorting out what is to be included and emphasised, and what will be excluded, is described within STS/SK as 'boundary work' (Gottweis 1998, Leigh Star and Griesemer 1989). The profound gendered implications of boundary work, have been discussed by Caglar (2008) in her analysis of gender knowledge in macro economic policy, which showed that disciplinary epistemic practices played a key role. In the case she analysed, disciplinary 'boundary work' within the field of economics , marks out the 'economic' from the 'non-economic' and thus irrelevant. In a dynamic similar to that discussed by Wagenaar (2004) this definition of 'the economic' restricts the episteme within which economists are willing to engage with the world. Here 'the economic' is deemed that which can be modelled, or that relating to flows of fungible resources, consciously excluding culture, inequalities or the consideration of power (Caglar 2008, Elson 1998, Sen 2000). In her analysis of attempts to gender mainstream macro economic budgeting Caglar (2008) showed the profound implications of these dynamics: feminists efforts to 'gender' macro economic planning and insert consideration of gender equality, encountered sustained resistance on the basis of two arguments. Firstly, 'gender issues' could not be represented within mainstream economic models which excluded biological reproduction and caring. Secondly, opponents argued that 'gender issues' were social rather than economic issues thus appropriately considered elsewhere or ex-ante.

Establishing Epistemic Practice and 'Facts'

These 'ways of knowing' or epistemic practices, and the boundary work they entail, are themselves socially and historically generated phenomena (Dagognet 1969 in Latour 1986:36), established through lengthy social processes involving repeated exchange of knowledge and information and, most importantly, competition. Explaining these processes STS/SK analysis illuminates the importance of material resources, which a piece of knowledge's author has at their disposal. For knowledge to gain wider acceptance, it must be rendered exchangeable - represented in a form which allows it to be mobilised, to travel and to be consumed, such as text[9] (Latour 1986, 2005, Law 1986, 2003). Latour terms this '*mobilisation*'. Analysing how knowledge becomes accepted and dominant therefore also entails a focus on the methods and materials through which knowledge has been exchanged. Many kinds of materials can be used in the representation of knowledge including persons' speech, text, art, electronic form or action (e.g. a doctor's practice).

Each of these material forms is not however, equally powerful. STS/SK literature argues that the 'stability' and 'mobility' (Callon and Latour 1981, Law 2003, Latour and Woolgar 1979) of materials matter. Speech lasts only as long as it is uttered, or a listener remembers (or partly remembers) its content. Written texts last longer, are more mobile and more stable. They are less vulnerable to wholesale misrepresentation, though equally open to interpretation (Latour 2005, Law 1986). Electronic formats are even more mobile. STS/SK scholars therefore argue that if an

[9] Latour (1986:33) notes 'before the printing press, everything had been achieved intellectually, but each achievement stayed temporary' because there was no way to move achievements around.

author has substantial resources to mobilise their knowledge thus reproducing and publicising it, it can gain a more dominant position than that produced by actors with less ability to mobilise their knowledge. In turn the more knowledge is referred to and reproduced, whether by the originator or by others, the more 'stable' or established it becomes (Latour 1990).

Thus the *material* dynamics of competition between knowledges begin to become visible. Knowledge does not become more popular or frequently referred to purely because it is 'truer'. Epistemic practice does not become more established because it produces 'better' knowledge. Knowledge and epistemic practice may become popular because its author is able to reproduce and distribute it more widely. Furthermore, if a piece of knowledge is rendered easily combinable with other established instances of knowledge on a similar topic, through adherence to standardised format for example, this also boosts the likelihood of others using and building upon it. Established epistemic practices such as the use of particular map scales, jargon or boundary work, can therefore become self-reinforcing, making 'breaks' with tradition difficult.

Controlling Knowledge in Organisations

These insights into the collective processes governing the institutionalisation of different ways of knowing within disciplines, have been applied to organisations and governance to illuminate how communication processes within organisations can be structured to influence action and knowledge within them (Latour and Callon 1981, Law 1986, 2003, Sinclair 2000, Latour 2005, Lendvai and Stubbs 2006). The study of this ordering, resting on simplification of problems and the exclusion of competing view points, and the activity which constitutes it, forms an explanation of power and stability within organisations or policy networks in ANT

approaches (Callon 1999, Callon and Latour 1981, Law 1986, 2003, Latour 2005, Lendvai and Stubbs 2006). Despite some variation in terminology, ANT approaches all argue this kind of control over issue representation is achieved through the co-option of both material resources and persons to act upon or participate in the representation of their favoured world view.

Callon and Latour's influental study of bureaucracy, 'Unscrewing the Big Leviathan' (1981) emphasises both persons and materials, particularly texts, in the accomplishment of these outcomes. In their portrayal of a bureaucracy Callon and Latour argue that texts will be used to stabilise the representation of a particular issue, but that persons must refer to, use and act upon them (1981:286 see also Law 1986). This reaction to texts is the crucial step in coordinating action around whichever favoured world view. Forming reliable alliances of persons acting on these perspectives thus helps to ensure continuity and stability in the local perception of problems, issues and action (Latour 1986). Even within one organisation, however Callon and Latour argue these processes are continually challenged and require continual renewal.

Law and Callon's (1988) analysis of competition and cooperation in an aircraft procurement exercise, explores the formation of alliances of persons coalescing around a homogenous vision of the problem at hand, by providing a counterfactual case. Procurement managers attempting to make contractors cooperate around one notion of 'the future of defence', attempted to structure contractor interactions through one design team empowered to make decisions. However, as the design team lacked resources to force co-contractors in other firms to act upon *their* vision, the design process repeatedly stalled as more and more aspects of the project were

constantly renegotiated and designs resting on different notions of 'the future of defence' were produced.

More recent applications of these approaches have investigated the potential for technology to be employed to control how issues are perceived and tackled. Keymolen and Bruders (2010) for example analysed how the establishment of a new database in Holland, for social workers across various agencies, bound their action into new standardised categories. In essence this analysis takes Wagenaar's (2004) work one step further by identifying a technology through which rules and categories can be forced upon practice. Similarly Ostendorf (2005), though not explicitly using a knowledge based approach, explored how computerised tools used by careers advisers in German schools were routinely used to give standardised careers advice, which enjoyed a privileged status as 'objective' because it came from a computer. Ostendorf's gendered analysis however found multiple examples of gender bias written into the questions and results of the programme. Thus boys were pushed into 'technical' occupations and girls to traditionally feminine ones such as customer service or dress-making.

Power Advantages

These processes provide advantages to some actors, perspectives and interests and marginalise others. When the representation of policy issues is defined in documents, and acted upon by persons, 'a set of practices is placed in a hierarchy in such a way that some issues become stable and need no longer be considered' (Latour 1981:285, see also Lachenmann 1994). Stabilising modes of thought and habits, helps to exclude controversies so that issues can be marginalised, '[moved into] 'black boxes' relegated to the realm of that which no longer needs reconsidered, those things whose contents have become a matter of indifference'

(1981: 285). These processes thus create advantages and inequalities for actors working with/within an institution. Actors whose preferred views are stabilised and represented with an institution, through materials and reliable coalitions acting upon them, no longer need to expend energy or resources arguing their case, making themselves intelligible, or refuting others, with the same intensity as their opponents (Callon and Latour 1981: 285 see also Latour 1986, Rip 1986).

STS/SK literatures therefore argue that access to material resources (speech, text, persons, alliances) plays a significant part in constituting the dominance or marginalisation of knowledge. They also however point out how epistemic practices, such as boundary work, underpin knowledge and can be institutionalised. This thesis therefore synthesises a new definition of gender knowledge as *explicit and implicit representations concerning the differences between the sexes and the relations between them, the origins and normative significance of these, the rationale and evidence underpinning them and their material form.* By articulating gender knowledge with STS and SK concepts of mobilisation, stabilisation, materials, epistemic practices and boundary work we can capture and describe how gender inequality is known, or not, within an organisation *in action*. In addition we can undertake a fine-grained analysis of the processes through which gender blindness and gender bias are constituted and maintained within an organisation.

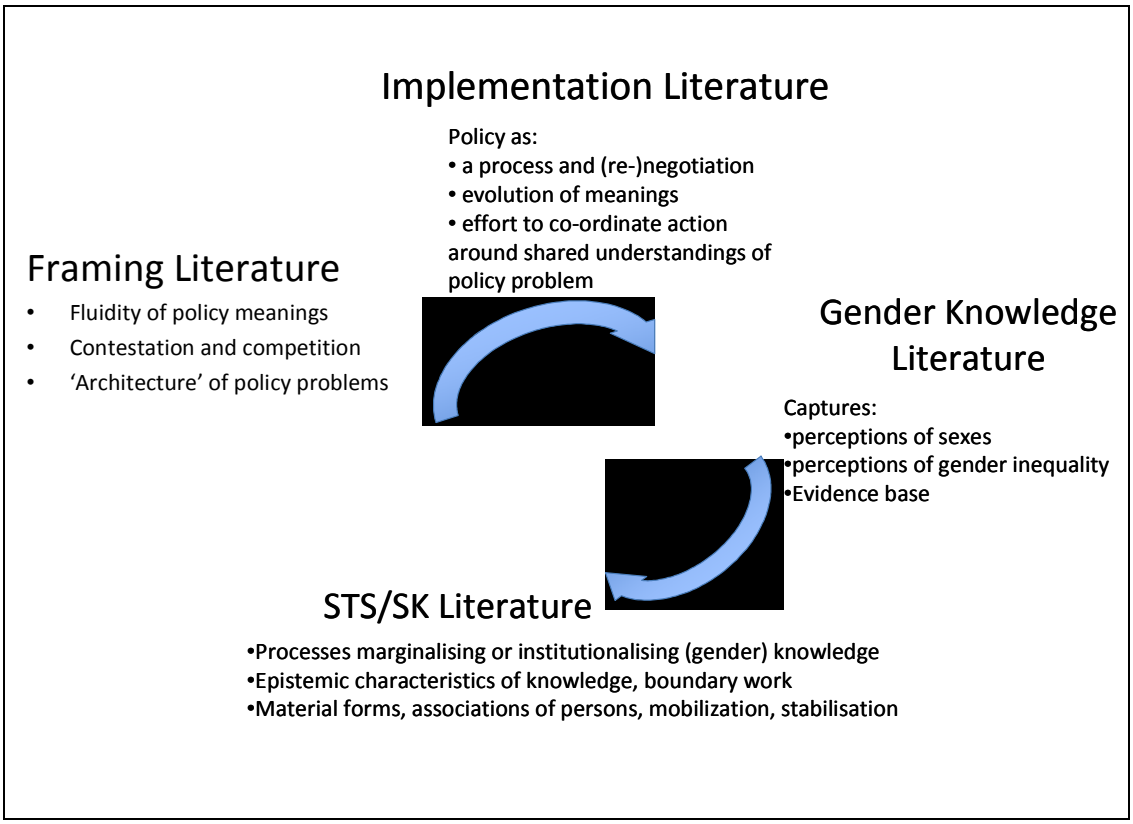
Conclusion

This chapter has reviewed conceptual tools from several literatures, to enable us to respond to the research challenges laid out in Chapter One. In Chapter One, I reviewed theoretical perspectives on gender, arguing that we have not yet fully operationalised it in empirical work as a constantly renegotiated process, operating both within state policy and the state itself. This hampers our understanding of

how gendered change within the state can occur, a lacune, which I argued is empirically relevant in GM implementation 'failures' and which can be seen in our analyses of it so far. To better understand this, I argued we must develop a conceptualisation of policy, which accounts for the relationship between the genderedness of organisations and policy implementation (Benschop and Verloo 2006).

The perspectives and approaches reviewed in this chapter present policy itself as a process of negotiation and contestation (Brown and Wildasky 1987, Pressman and Wildavsky 1973, Sabatier 1986, Schoen 1973), in a manner similar to our existing conceptions of gender as a process of negotiation (Acker 1990, Beckwith 2005, Chappell 2002, Connell 1987, 2002, Duerst Lahti and Kelly 1995, Harding 1986, West and Zimmerman 1987). The approaches which use the knowledge concept, as a collective and context dependent achievement, enable us to theorise the link between existing assumptions, practices and perspectives and new policy actions (Johnstone 2000, Rein and Laws 2003, Wagenaar 2004, Yanow 2000). The concepts drawn from STS/SK (mobilisation, stabilisation, boundary work, materials and associations) supply a detailed micro perspective through which these are institutionalised and through which action is coordinated around them. We can thus conceive of GM as a knowledge process: GM implementation is a process where by a new conception of gender inequality, based on a new way of seeing it, is mobilised within an implementing organisation. The conceptual contribution of each of these literatures is summarised in Figure 2-1

Figure 2-1: Synthesising an analysis of GM as a knowledge process



This new synthesis of literatures and perspectives, not previously been fully integrated, provides a set of tools for the investigation of GM implementation in DG Research which encompasses several aspects. Firstly, it should investigate how the GM policy has been mobilised, using concepts from STS/SK and it should consider the gender knowledge (including evidence/epistemic characteristics, form etc) which it entails. Secondly, it should include analysis of the day to day practices and understandings which constitute 'mainstream' activity and the gender knowledge, i.e. reported understandings of gender inequality, and GM, which interviews and documentary analysis reveals, *and* the processes of exchange and replication, and the associations of persons, through which they are mobilised and stabilised.

Such an analysis will enable us to analyse competition between pre-existing conceptions of gender inequality and its local (ir)relevance, and those promoted by GM and any subsequent changes in the dominance/marginalisation of competing (non)perceptions of the gender inequality problem. This thus constitutes an empirical illustration of the processes through which gender bias and gender blindness achieve their durability, and the mechanisms of resistance and change involved in GM implementation. As such findings gleaned using such an approach should significantly develop our understanding of change and how GM might be achieving it.

Further discussion of the empirical process through which this analysis evolved, how it has been operationalised and the research design, which I have used, is provided in Chapter Three, before Chapter Four introduces the case and starts the presentation of empirical results garnered using this approach.

3

Chapter Three Research Design and Method

Having outlined the research problem which this thesis examines and the theoretical approach I have developed to tackle it, this chapter addresses the methodological issues involved in developing this approach and designing and undertaking fieldwork. I begin by discussing the notion of feminist research and the research strategy through which research questions and theoretical approach were developed, before moving on to more detailed discussion of research design, fieldwork methods and analysis and research quality and credibility.

Feminist Research

Although research methods text books often include a section on feminist approaches, there is in fact no single feminist approach to political science or policy analysis (Krook and Squires 2006, Ramazanoglu and Holland 2002, Randall 2002:109, Squires 1999). Feminist research is distinctive more in that it is 'problem driven' coalescing around a common evolving agenda (Randall 2002) which recognises gender relations as political (Mackay 2004: 100) and often tends towards a post-positivist epistemology (Mazur 1999:485, Tickner 2005: 18).

Chapter One highlighted the current developments in feminist political science and gender theory and the research problems highlighted; increasingly, gender is theorised as a system of meaning or process. The methodological challenges which operationalising these conceptualisations of gender, as a 'messy' and complex

process, present have been debated in recent literature (Beckwith 2005, Duerst-Lahti and Kelly 1995; Hawkesworth 1994, Lovenduski 1998, Mackay 2004, Randall 2002) resulting in calls to develop innovative research strategies and to borrow from other disciplines as appropriate (Kenney 1996, Krook and Squires 2006, Mackay 2004). As a result, feminist research often employs innovative methods and combined approaches to tackle current research problems (Childs and Krook 2006, Krook and Squires 2006, Mackay 2004, Mazur 1999, Randall 2002). Developing the conceptual and analytical approach outlined in Chapter Two, which responds to these calls to operationalise gender as theorised, has formed a significant part of the development of this thesis. This has been achieved through an abductive (Blaikie 2000:115) or grounded theory research strategy (Bryant and Charmaz 2007, Strauss and Corbin 1994: 274, Silverman 2000), in tandem with an interpretative approach (Blaikie 2000:115, Strauss and Corbin 1994, Yanow 2000) and the application of theoretical concepts drawn from STS/SSK (Callon and Latour 1981, Callon, Law and Rip 1986, Gottweis 1998, Latour 1986, Law 2003, Latour and Woolgar 1979, Leigh Star and Griesemer 1989, Lendvai and Stubbs 2006) . This process is discussed in the next sections.

The Intellectual Puzzle

I began this project in 2007 with the general topic of looking at GM in the EU. In the broadest possible terms, the body of academic literature on GM, which I was reading for the first time, suggested GM was not working. I also brought several observations about policy implementation from my own professional work as a policy consultant which informed and motivated my curiosities. Policy consultants understand themselves supplying 'objective' evaluation and consultancy to ensure that policy is assessed for its efficacy and transparency. Within the organisation where I worked I was the youngest member of staff in a professional role and the only with a training in political science. With only two exceptions all my 30+

colleagues had studied economics. Usually, we applied the same formula of 'economic assessment' to policy. What were the inputs, outputs and outcomes of a policy and was it efficient? I often made comments about the implicit de-politicisation of policy issues which recourse to 'evidence based policy' entailed. Sometimes, I remarked that differences in the satisfaction of different kinds of public service users, were being glossed over. These observations were usually met with incomprehension.

During my time at this firm we won a contract to support Scottish schools and Local Authorities in the implementation of the new Race Equality Duty. This Duty binds all public sector bodies in all departments to promote racial equality. At the inception of the project, the colleague who had won the job explained to us, her colleagues, what the Race Equality Duty entailed. The gung-ho dismissive attitude of our colleagues, including the boss, did not faze her. All departments in an organisation, she explained, were required to examine their own work to see if any element of their practice impacted differently on people of different races. Our role was to support organisations in doing this.

Although my own undergraduate degree had not included any formal training on social constructivism, race or policy, I found the explanation entirely convincing and set about working on the project with a greater sense of conviction and motivation than usual. Nonetheless, trying to convince mainstream departments in Local Authorities, such as refuse and waste, that they may indeed have a role to

play in the promotion of racial equality, often degenerated into conversations which Local Authority staff patently found absurd[10] and which generated hostility.

This experience makes the implementation problems of GM, as discussed earlier in Chapter One appear rather simple – many people are not aware how strongly their own perspective is shaped by their position or prior training and most people, do not understand the state's role in the construction of phenomena such as race or gender. I can empathise with this incomprehension. In fact, in many ways an interest in incomprehension and unintelligibility has become an analytical focus or driver in this research. Although I have held a sustained interest in the lives of women for as long as I can remember, along with an inarticulate perception that some form of gender inequality existed, I entered my postgraduate training with no knowledge of gender theory and a decidedly squeamish attitude about calling myself a feminist. Arriving at graduate school to act on these interests, meshing it with my professional knowledge and preoccupations as a policy consultant and formulating them into researchable questions, took a considerable amount of time as I began to engage with EU studies, gender theory, FPA, policy studies and IPA.

Initially, I hoped to focus on 'what was really happening', if GM was not working as intended. This would entail a focus on action, rather than documents and would seek to capture mechanisms of resistance, which I assumed must exist, if GM was 'not working'. I had no real idea of what these mechanisms might be though. Were

[10] Reviewing their records revealed that inspectors checking commercial and residential waste disposal violations were routinely applying rules and criteria more stringently to particular racial groups, rather than issuing verbal and written warnings explaining violations. As a result, refuse collection was indeed contributing to a situation where particular racial groups were being disproportionately penalised.

they discursive? Adopting a less ambitious focus I initially thought I might draw on the MAGEEQ methodology and investigate whether 'the frame of gender mainstreaming' was present in mainstream departments and trace how it had travelled. I thus gathered European Commission documents pertaining to different arms of EU institutions starting with EU strategic gender equality policy and tracing my way down into discrete policy areas.

This generated an enormous amount of documentary data, which could be separated into four types of documents: strategic policy documents, policy formation documents, implementation documents and 'expert' knowledge. At the highest strategic level, policies such as the Roadmap to Equality (2002-2006) detailed EU/European Commission gender equality policy including commitments to GM, and spelt out discreet actions in multiple policy areas along with indicators of success or progress. Multiple opinion documents and drafts of European Parliament (EP) opinions and submissions available on line, provided evidence of the processes of contestation occurring within EP Committees, which fed into the creation of the strategic policy documents.

Several kinds of 'implementation' documents were also available. These included glossy evaluation reports measuring policy success or progress using pre-determined indicators. 'Inter-service' working implementation documents, on the other hand, came in the form of tables and bullet points and often showed a bald discrepancy between strategic commitments and action, with departments leaving sections blank or fulfilling only a fraction of the strategic GM commitments requested of them. Lastly, online searches for EU gender equality policy also produced very large amounts of gender monitoring data, along with 'expert'

knowledge in the form of best practice guides describing the gender equality issue and gender equality policy options including GM.

Analysing these documents however for 'the frame of gender mainstreaming' and trying to process trace the links between them, did not emerge as a meaningful research exercise. The majority of the strategic policy documents collected described gender equality policy and implementation results at a very abstracted level, comparing large policy fields across the whole of the European Commission or even the European Union and its Member States. They were a distant representation of policy action and contained very little material relating to the grist of trying to implement GM. The working implementation documents relating to the European Commission, might have represented practice more closely, but they were written in the form of bullet points and were often incomplete, so that it was impossible to piece together a meaningful analysis of how they 'framed' the gender issue. Numerical data on gender equality and indicators were also ill-suited to frame analysis. Attempting to delve deeper into mainstream policy, I also collected documents from test case study fields (employment and violence against women) finding that they usually lacked any explicit reference to men or women or gender. Gender it seemed was not there and had not been mainstreamed.

On account of my experience as a policy consultant, however, I wanted to render the existence of these documents meaningful: at minimum, resources were being expended to describe EU gender equality actions and to create pan-European data on 'the gender issue', because of GM. At the same time I finally began to understand the gender theory I was reading (e.g. Connell 2009, Acker 1990, West and Zimmerman 1987) and to think of gender as ever present, but usually below the radar of many people, including myself. Gender, I discovered was a process, or

a performance, or something we do or something in organisations. On this basis, to me, GM therefore meant the systematic assessment of gendered impacts of policy, and systematic ameliorative action – a process which as a new feminist I felt was the only meaningful application of GM, but which I believed as a policy consultant was unlikely to be implemented. Furthermore, the documents collected could not be argued to represent this ideal of GM. I wondered instead why so much *data* and expert knowledge was being created? Was it purely for legitimation? Did this even matter, could it nonetheless have an impact? What understanding of the gender issue did this illustrate and what was the meaning or impact of its creation? What could its accumulation amount to? In a separate vein, I wanted to know what lay behind these documents, and how bureaucrats were reacting to demands to 'mainstream gender', as had my clients and I whilst seeking to implement the Race Equality Duty? Did all this information filter into action?

To grapple with these questions I began reading interpretative policy analysis in greater depth and considering how I could access this kind of data. IPA literature introduced me to alternative approaches to frame analysis and framing, and very importantly to discussion of *practice* and *knowledge*. Around this time I also came across the concept of gender knowledge. Articles available at that time using the concept of gender knowledge (Caglar 2008, Schwenken 2008) seemed to demonstrate a more suitable analytical tool to examine gendered assumptions in mainstream policy. Caglar's (2008) paper discussed how established ways of thinking affected how feminists could participate in gender budgeting policy formulation[11], showing feminists had had to express their arguments within

[11] In essence gender budgeting is a form of GM within budgetary policy. It is equally as contested as GM.

economic conventions of modelling, rather than qualitatively, in order to gain (tokenistic) access to policy debates.

The gender knowledge concept immediately seemed to fulfil several methodological needs. Thinking about the documents I had collected, I was able to envisage using the gender knowledge concept to analyse gendered assumptions in mainstream policy in the documents where gender hadn't been explicitly mentioned, something which I had found intellectually difficult to accomplish using the MAGEEQ critical policy frame analysis tool I had been drawing on. This has much to do with personal intellectual style and what 'clicks' for different individuals. Secondly however, I thought the knowledge concept would enable me to link interpretations of policy issues to the methods of presentation, *including numerical data* which were de rigueur in the texts I had collected - I could consider what these bullet points and graphs meant for the presentation (or not) of gender issues and how GM was understood. In terms of action and practice, I could ask what methods of thinking shaped bureaucrats' daily practice and perspectives. I also wondered if I could analyse the body of expert knowledge and data that I had collected as a whole, to trace a collective process of rendering GM intelligible[12]. Perhaps the fruits of this 'expert knowledge' and implementation/evaluation data were pervading policy implementers thinking too?

[12]This avenue of investigation also owes much to the intellectual input of Richard Freeman.

Research Strategy and Approach

Abductive Research Strategy

This rolling process of question development through movement between data and theory described above, fits the description of a grounded theory (Charmaz 2006, Strauss and Corbin 1994:275, Silverman 2000:252) or 'abductive' research strategy (Blaikie 2000), a general methodology characterised by 'a way of thinking about and conceptualizing data' (Strauss and Corbin 1994: 275). The grounded theory approach has been extensively discussed in research design literature, and in common with many approaches remains debated and contested (see for example Bryman 2008). An abductive/grounded theory approach differs fundamentally however from inductive or deductive and behaviouralist or positivist methods in its relationship to theory and data, because it implies approaching a research problem without a definite hypothesis or theoretical structure and seeking to 'bring into consideration whatever elements are at hand' (Yanow 1996: 42, see also Blaikie 2000, Bryman 2008: 546, Strauss and Corbin 1994: 136, Silverman 2000:252). It seeks instead to construct theory that is grounded in every day activities and/or in the language and meanings of social actors (Blaikie 2000:117).

For Glaser and Strauss, the authors of 'The Discovery of Grounded Theory' (1967), the defining components of grounded theory practice include simultaneous involvement in data collection and analysis, constructing analytical categories from data rather than pre-conceived hypotheses, advancing theory development and conducting literature review during each step of data collection (1967 in Charmaz 2006:5). This accurately describes the processes through which my own research has proceeded.

Critics of the grounded theory approach question whether such a 'theory neutral' approach is possible, as researchers often 'see' what their existing theoretical knowledge throws their focus onto (Bulmer 1979 in Bryman 2008:549). Defenders of the grounded theory approach tend not to represent such a purist position however, arguing that the strategy does not entail approaching the fieldwork site or research problem 'cold' or in isolation from existing research and theory. Rather, it requires applying existing theory as 'sensitising rather than definitive' concepts (Blaikie 2000:136, Charmaz 2006: 17, Silvermann 2000:253, Yanow 1996: 43). Using theory in this manner, the researcher sets out with some generally defined research concepts which provide clues and suggestions. This attitude certainly describes my own approach to my research. Armed with a novice's understanding of gender-theory and a perspective on meta-policy[13] implementation I began to undertake document analysis and briefing interviews, puzzling over *what* could meaningfully be said about the activities I observed, which had been provoked by the adoption of 'gender mainstreaming', but which didn't conform to my notion of it, nor the multiple variations of it I saw described in empirical and theoretical literature. Based on these approaches the abductive theory-building in this thesis has involved selecting activities and meanings considered to be relevant to the purpose at hand and constructing a model (Schuetz 1963: in Blaikie 2000:118).

An Interpretive Approach: Epistemology and Ontology

A grounded theory or abductive research strategy is often presented as synonymous with an interpretive approach (see Blaikie 2000:115, Charmaz 2006:9). This is understandable when one considers the two simultaneously occurring

[13]A policy concerned with the activity of making policy. For discussion of meta activity see Parsons (1995) Part One.

intellectual moves which Blaikie describes as characteristic of an abductive research strategy 1) describing the activities and meanings of research subjects and 2) deriving categories and concepts that can form the basis of an understanding or an explanation of the problem at hand (Blaikie 2000 :117). Whilst I understand the abductive research strategy and the interpretive approach as separate, this research's approach is certainly interpretive, because it focuses on meanings. As such, it responds to calls within feminist political science for contextual approaches which emphasise 'meaning, process and context' (Devine 2002:199 see also Childs and Krook 2006, Mackay 2004, Mottier 2004, Siim 2004) .

Interpretivism is concisely described by Blaikie drawing heavily on Schutz (1963) and Giddens (1976):

> 'Interpretivism takes what Positivism and Critical Rationalism ignore – the meanings and interpretations, the motives and intentions, that people use in their everyday lives and that direct their behaviour – and it elevates them to the central place in theory and social research. For interpretivism, the social world *is* the world interpreted and experienced by its members from 'the inside' (Blaikie 2000:115)

Capturing these meanings then is the aim of an interpretive approach, which in turn entails epistemological and ontological commitments. The interpretive school of thought marks a clear distinction between how the natural or physical world can be known and how that of humans and social institutions can be known (Devine 2002:201). Whilst the former may aim, through positivist methods such as experiments, to generate generalisable rules which can be applied across contexts, the latter approach cannot and does not aspire to do so. Interpretative *policy analysis* focuses on the meanings that policies hold for the persons engaged with them, emphasising their 'mundane' and 'local' knowledge (Yanow 2000:5). Undertaking interpretive research therefore entails 'aim[ing] to see this world as

our research participants do' (Charmaz 2006: 14), which includes not only explicit knowledge and meanings, but also tacit ones (Altheide and Johnson 1994:493, Polanyi 1966, Yanow 2000:14).

This approach therefore entails an ontological assumption that social reality is the product of processes by which social actors negotiate meanings together, and that these are plural and inter-subjective (Blaikie 2000:116)[14]. Interpretive policy analysis thus not only entails analysis of 'what' policies mean but also 'how'; the processes through which policies are communicated, who their audiences are and what the context-specific meanings are, form a staple part of analysis (Yanow 2000:14) . A recognition of the contextual and contingent nature of these knowledges then, and their 'lack of universality and eternity', contrasts with positivist notions of knowledge (Yanow 2000:17).

An interpretive approach also carries epistemological commitments. It intrinsically implies a recognition that any results are themselves the researcher's interpretation, albeit one which focuses on the meanings expressed by research participants (Charnaz 2006: 10, Yanow 2000:5). Rather than seeking to eliminate this personal interpretation however, this research has sought to use my own position as a resource for 'strong reflexivity' (Harding 1993, 1991). This notion of reflexivity emphasises consideration of the context of both the discovery and of the researcher, requiring them to reflect upon their own position (Rönnblom 2005:239).

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[14] Though as Yanow notes 'the interpretive approach is less an argument (in the context of policy analysis, at least) contesting the nature of reality than one about the human possibilities of knowing the world around us and the character of that knowledge' (Yanow 2000:7)

At the project's outset I was unwilling to identify as a feminist and found structural conceptualisations of gender difficult to apply to policy implementation. Whilst this changed during the project, I tried to maintain a memory of my previous professional understanding of policy implementation, and my incomprehension of the social construction of race and gender theory. My decision to choose a research strategy which seeks to illustrate how different groups act on (often tacit) understandings of gender is directly related to my own feelings of dislocation from the trained economists with whom I previously worked and my initial struggle with gender theory. These subjective experiences of estrangement and puzzlement afforded me three differing positions to draw on as resources in analysis: the policy analyst, the anti-feminist and the feminist academic, to 'move back and forth between seeing things as they are and seeing them as they are not' (Yanow 2000: 9).

Analysis and Theory Building in an Abductive Interpretive Approach

The final stage in the abductive research strategy describes the process of moving from lay descriptions of social life to *technical* descriptions of social life (Blaikie 2000:116 (my emphasis)). It does not imply 'forcing preconceived ideas and theory directly upon our data' (Charmaz 2006:17). Rather, during my project I recursively observed and analysed data, moving towards more and more sophisticated theoretical concepts in order to render the processes and meanings which data contained, meaningful.

Two rounds of face to face fieldwork (see below) were undertaken with staff in DG Research in Brussels. The first began with a focus on what gender knowledge was present in DG Research. Undertaking initial analysis of findings I reflected that

during interviews I had focused quite heavily on the individual as a unit of analysis. This resulted in a conscious re-focus on system level analysis, so that consideration of processes and flow between differing settings within DG Research became an aim in subsequent fieldwork and analysis.

Many theoretical ideas were used as sensitising concepts during analysis, some of which were subsequently discarded[15] in favour of terms which better illuminated the emerging processes or phenomena in the field and the problematiques which I understood in existing literature - operationalising gender as a system or process and understanding its durability. The most important theoretical terms which my thesis has used and developed are discussed in Chapter Two and are summarised in Figure 3.1.

[15] For example, in the early stages of research I considered examining Europeanization and asking whether and how specifically 'European' ideas on gender equality were being created. I also considered using 'norms' as an analytical focus before adopting knowledge. Norms were dropped because I found it difficult to imagine how I could account for having found them. I also considered using 'scale' a term from political geography, to enable concise discussion and comparison of the material referents and community of an instance of gender knowledge e.g. does a given piece of knowledge refer to every day individual practice or the business of parliamentary policy formation, or to the development of science in Europe, or in a lab?

Figure 3-1 : Sensitising Theoretical Terms

- Knowledge (and knowledge processes) an alternative to frames which entails a clear focus on the collective material processes involved in the establishment of shared perceptions and ways of thinking.
- Gender knowledge defined as ***'explicit and implicit representations concerning the differences between the sexes and the relations between them, the origins and normative significance of these, the rationale and evidence underpinning them and their material form'.***[16]
- Critical frame analysis (Verloo 2005), as developed by the MAGEEQ project provided sensitising questions to consider which elements of the policy issue gender knowledge engaged with. The full critical frame analysis tool is reproduced in **Annex I.** Its main themes are: diagnosis of the policy problem, attribution of roles in diagnosis, prognosis, attribution of roles in prognosis, normativity and balance between different elements of the policy frame.
- Epistemic characteristics, the methods of representation which characterise an example of knowledge – what is its evidence? Is it based on data structured with longitudinal thinking or perhaps on anecdote and intuition?
- Boundary work (Gottweis 1998, Leigh Star and Griesemer 1989), discourse

[16] I am aware that one limitation of my analysis of gender knowledge is its lack of formal engagement with intersectionality. Whilst this may form an avenue for future development, it has not been taken into account in this project on the grounds that analysis of gender knowledge has taken place within the boundaries of EU science and research policy and local understandings of it. Equality dimensions such as race, class, disability and sexuality are largely excluded from consideration in the vocabularies of staff within DG research.

or practices marking out the relevant and the irrelevant.

- Form (Callon and Latour 1981, Law 2003), the material(s) used to express an instance of knowledge such as text or speech.
- Mobilisation, the movement and promotion of knowledge through material forms (Latour 1990, Law 2003).
- Stabilisation, the degree of fluidity or stability within an organisation around a particular piece of knowledge. Also applicable when considering individual instances of knowledge represented in material form (Latour 1990, Law 2003).
- Associations, groups of persons or organisations regularly acting upon or promoting a particular representation of a policy issue (Latour 1990, Law 2003).

Whilst a focus on IPA and gender knowledge emerged during initial fieldwork before DG Research was chosen as a case, application and utility of the concepts of mobilisation, stabilisation, form, epistemic characteristics, associations and boundary work emerged during analysis and fieldwork as respondents began to describe the processes involved in GM policy formation and implementation. Gender Unit staff spoke explicitly of associations and documents recursively generating a science and research policy agenda. Tackling the gender agenda they described forming groups to find out what the relevance of the gender issue in science might be, of subsequently 'translating' the idea of GM into existing practice, devising solutions using available policy tools, spelling out actions to implementation staff and forming groups to publicise and act upon the new ideas of 'including a gender dimension'. Here, an interplay between texts, persons and practice became clear - policy documents did not simply precede practice.

In addition, some policy ideas enjoyed significant stability whilst others appeared more fleeting. Reviewing policy analysis, IPA and STS/SK literature yielded the concepts of mobilisation, stabilisation, form, epistemic characteristics, associations and boundary work to begin conceptualising and representing these phenomena. Initial analysis of meaning had uncovered differences in local understandings of gender and its relevance/irrelevance in local practice and policy, these additional concepts proved useful however to begin grasping wider processes. Analysing the sub-case study areas using these concepts, revealed differences in the processes and practices underway, underpinning these differences in meaning.

Case Study

Method and Rationale

This project used a case study research design because of its strength in uncovering meanings (Yanow, Schwartz-Shea and Freitas 2008) and tracing operational links (Yin 1994:6). No single definition of the case study method can be argued as definitive however (Bryman 2008: 54, Silverman 2000:101, Stake 1994, Yanow and Schwartz-Shea 2008:1). Indeed, case studies can be utilised very differently with two broadly differing approaches (Yanow et al 2008): those in the qualitative or interpretive tradition which utilise case studies for their ability to gather rich and contextualised detail (Bryman 2008, Yanow 1993, Yin 1994) and the comparative case study method traditionally favoured in political science (Gerring 2007:26, Hopkin 2002, Lijphart 1971 in Yanow, et al 2008, Skocpol 1979). These approaches differ in terms of their focus on cross-case or within-case analysis and the theoretical contributions they aim to make (Hopkin 2002:250).

The latter case study approach applies cross-case analysis and draws on positivist, natural-scientific methods and epistemology. It aims toward the production of

causal explanations linking outcomes or phenomena of interest X, to independent variables Y or Z (Hopkin 2002: 251, Skocpol 1979). Such findings are intended to produce generalisable causal theory (Hopkin 2002). This thesis however, aims to apply the insights of interpretive policy analysis to examine sense making in the implementation of GM, to ask *what is really happening* when the policy is implemented. It thus uses the 'single-n' case study design (Yanow et all 2008).

Single case studies are frequently viewed with suspicion within political science and criticised for their weak generalisability (Gerring 2004:341, Lieberman 2005: 435, Yin 1994:37). These criticisms often focus in particular on 'selection bias' (Achen and Snidal 1989) where interesting cases are chosen for analysis, to the cost of instances where change has not occurred. In a similar vein King, Keohane and Verba (1994), argue that single case studies represent a single observation with little value for extrapolation beyond itself. These criticisms rest however, on positivist and statistical rationales (George and Bennett 2005:6) which assume that a large number of cases generates more valid general principles (Yanow et al 2008).

The kind of 'generalisation' which an interpretive case study approach aims to generate however, differs fundamentally from this rationale, seeking instead to generate '*verstehen'* (Yanow et al 2008:7, Yin 1994:37) and to build theoretical perspectives which enable it. Yin for example cites Jane Jacobs' study *The Death and Life of Great American Cities* (1961 in Yin 1994: 37) which, through its single case study approach to New York examined broader theoretical issues in urban planning[17]. Jacob's work generated new foci in the examination of cities and their

[17] Such as pedestrian street accommodation, the role of parks, the need for mixed land-use etc.

planning, which had a significant impact on the field. Rather than focusing on the isolation of particular factors as causal to particular outcomes, the theory building aims of this thesis are more complex.

Firstly, it seeks to re-create local actors' understandings of policy to provide insights into the actions and activities of local actors. This form of case study is the most frequently encountered and recommended method in IPA (see examples Johnstone 2000, Wagenaar 2004, Wagenaar and Cook 2003, Lendvai and Stubbs 2006, Laws and Rein 2003, Yanow 1993). To access these meanings multiple sources including interviews, documentary and artefact analysis are used to build up a representation of understandings in the field (Yanow 2000:31).

Secondly, applying theoretical insights drawn from the sociology of knowledge, it seeks to investigate the *material* processes involved in their constitution, exploiting the case study method's suitability for process tracing (Bryman 2008: 53, Yin 1994). In terms of generalisability, the project uses an examination of GM implementation to develop a framework to understand the coordination of understandings of the gender inequality issue, gendered assumptions, and gender blindness. The thesis uses the data to make an argument that analysis of knowledge mobilisation and stabilisation can yield insights into the perpetuation of gender bias and gender blindness and dynamics of change – this is intended to suggest a framework of application in other cases, whilst the outcomes which the case study finds in terms of how gender mainstreaming has worked in this instance, show the theory's utility. As this research involves thinking about a phenomenon in a new way, a case study is therefore the most apt research design (Gerring 2007:41).

A similar logic supplies a retort to the 'selection bias' criticisms often levelled against single case studies. Positivist or statistical logics of generalisability are not an appropriate measure of judgement for an interpretive case. These approaches assume that more observations generate better findings and assume that a single case study means a single observation (Yanow et all 2008:4). Interpretative research however, engages in observation in an ethnographic sense so that the number of 'observations', 'is not coterminous with the number of locations in which the case study is carried out' (Yanow et al. 2008:4). Within the interpretive single case study approach, multiple sources of data reflecting on interaction, social relations, and routines are used to supply multiple observations within the case to build up a rich and triangulated picture (Yanow et al 2008:4). Furthermore, interpretive policy analysis follows policy 'across the full range of actions entailed' (Yanow et al 2000:4) taking multiple groups of actors and communities of meaning attached to one policy into consideration (Yanow 1993). Where statistical methods require large sample sizes then to allow inferences to a large population, large-n practices would in fact diminish the depth and quality of contextual information which a single case study can achieve (George and Bennett 2005:31) and which in this instance is required.

Defining the Case

The case study location for this project was defined in several stages, with regard to the theoretical and empirical aims of the project. The EU has exhibited strong rhetorical commitment to gender equality since its inception at the Treaties of Rome. As reported in Chapter One, this commitment has been followed by EU constitutional commitments to the ideal of gender equality as well as several rounds

of strategic gender equality policy. Recently, this has been characterised by the EU's 'dual approach' to gender equality, combining GM with specific actions[18].

In many respects these commitments constitute the EU a leader in gender equality policy, rendering it an important case study in and of itself. This research project uses its case study however, in order to generate wider theoretical insights about the production of gender through the state and chooses its focus appropriately - the case study organisation must have the defining features which make regulation and/or governance of gender possible, such as the resources to constitute the categories of social structure and a degree of internal coordination in its practice (Connell 1990: 509-515, Connell 2006). Whilst the EU is not a fully a state and lacks some of the traditional characteristics of a state, its possession of these bureaucratic policy making and executing capabilities (Shaw 2002, Wobbe 2003), making it a suitable site for study.

In the early stages of my research I began seeking specific policy areas to study, planning to focus on two policy areas. At this stage I began conducting briefing interviews with knowledgeable parties linked to the European Commission and collecting documents relating to both EU strategic gender equality policy and to two pilot policy areas: violence against women and employment. These pilot policy areas were chosen for many reasons. Each was highlighted in EU strategic gender equality policy as a priority area and each is also recognised as centrally important to the gender equality agenda. Pilot fieldwork indicated that this two case approach with these policy areas provided few advantages however. EU competencies and

[18] Fourth Medium-term Community Action Plan for Equal Opportunities (1996 – 2000), Community Framework Strategy on Gender Equality (2001–2005), Roadmap for Equality Between Women and Men (2006-2010).

policy tools varied significantly between the two cases. Employment is an enormous field of EU activity comprised of multiple streams of activity and funding, ranging from binding legislation to the structural funds, and encompassing implementation actions within the Commission itself and Member States. In the field of violence against women on the other hand, the EU's policy is predominantly comprised of soft law and recommendations, with much influence being exerted on new entrant states during the enlargement process (Kantola 2006, Kriszan and Poppa 2010).

At this stage two decisions were taken. Firstly, after pilot research, I concluded that the opportunity cost involved in familiarising myself with two such complex and different cases was too high. At this point I opted to study only one policy area and began reassessing my choice of policy areas. Employment constitutes a very complex field, which has already enjoyed significant interest from academic researchers. Violence against women on the other hand, presented a far smaller amount of current policy implementation activity for observation. Briefing interviews with knowledgeable persons[19] however threw up two suggested areas as potential case studies – migration and science and research policy. Both were suggested on the basis of access.

Exploratory fieldwork indicated that little research on GM in science and research policy had been undertaken, despite the fact that the GM apparatus is amongst the

[19] Three academics, one staff member at the Directorate General for Internal Policies of the European Union in Citizens Rights and Constitutional Affairs, one advisor from the Bureau of European Policy Advisers in the European Commission, two members of The European Women's Lobby, one UK National contact point and one member of the EU steering committee on GM in science 'the Helsinki Group'.

most developed in the Commission (Rees 1998, Research Interview Gender Unit Staff Member). Contact with DG Research, also indicated managerial support for the project and good access. DG Research also provided a further advantage – discussions with staff members indicated that science and research policy is itself divided into disciplinary areas. Within these disciplinary areas significant variation in GM activity and impact could be observed.

A focus on DG Research therefore provides a manageable opportunity to investigate how GM is implemented within a bureaucratic state-like institution. It provides access to observe how policy commitments move from strategic or rhetorical commitments to actual implementation - who is involved, how and through what (knowledge) processes. The scope of the DG Research case study was therefore drawn loosely around DG Research itself encompassing actors responsible for implementation. This included staff involved in the devisal and promotion of GM policy in DG Research (the Gender Unit) and strategic actors such as steering group members usually located in Member States or attached interested parties. To study how policy was actually implemented in DG Research, two disciplinary Directorates charged with implementing policy within DG Research were examined. The case study thus did not include engagement with the EU's *sui generius* character, namely its unique status as multi-level polity. Data presented do not encompass inter-state bargaining or policy making at the level of the European Council, nor DG Research's partners in member states, nor assessments of impact within them. These characteristics of the EU and its impact were beyond the gender theoretical aims of this project and would have rendered the study unmanageable for one researcher.

The DG Research case provided several important research opportunities. During FP6, the administrative cycle coming to an end during my fieldwork period (see Chapter Four), DG Research had one of the most well structured and advanced GM

apparatuses in the European Commission[20]. Thus, amongst multiple examples of tokenistic GM implementation (see Chapter One) DG Research provided an opportunity for close and detailed observation of an active and developed GM policy. Secondly, the DG Research case contains examples of both change and non-change, which could be contrasted. This provides two advantages. Firstly, it strengthens analysis by providing possibilities to ask new questions through contrasting cases, giving the researcher the opportunity to read one case through the other, enabling a useful analytical distance (Rönnblom 2005:246). Secondly, contrasting these two sub-case study areas strengthens and broadens theory development by supplying examples of both change *and* mechanisms of resistance.

The case chosen does not seek then to be 'representative' in the statistical sense; rather it provides a manageable model in which to build theory, where sufficient implementation action is observable to make research meaningful. As a 'positive' case study of GM, where a developed GM apparatus is at hand which has yielded both change and non-change, it helps to supply insights into GM in action, among a literature more dominated by negative examples. It could thus be argued as an 'extreme' case or a 'critical' case (Bryman 2008: 55, Yin 1994).

[20] FP 6 officially ran from 2002-2006, implying that FP 6 projects were *started* during this period. As a result FP 6 projects were still under way during the fieldwork period in 2008. Interviewed staff had experienced involvement with the FP 6 instruments as a result.

Data Collection

In order to access this rich context, case studies typically employ a full variety of evidence including documents, artefacts, observation[21] and process tracing (Yanow 1993, 2000, Yin 1994). Opportunities for observation within DG Research were initially sought but were not undertaken on grounds of access.

Document and Briefing Interviews

Documents can be interrogated through a number of different lenses to provide a number of different kinds and levels of data (May 2001:175). Within political organizations, documents form an important source of evidence of how people work and organize their activities (Atkinson and Coffey 2004:46, Freeman and Maybin 2011). In line with the theoretical concepts of mobilization and stabilization used to structure explanation in this project, texts were considered a vital part of the knowledge processes within DG Research. As Bloomfield and Burdabakis state 'textual communicative practices are a vital way in which organizations constitute 'reality' and the forms of knowledge appropriate to it' (Bloomfield and Vurdabakis 1994 in Atkinson and Coffey 2004:47, see also Callon and Latour 1981, Law 2003, Latour 2005).

Initial documentary evidence was collected through internet search engines such as Google, the European Commission's Cordis[22] database and the European

[21] Two instances of observation were carried out during this project. Both were Women and Science events, one within the Parliament and one held in Prague for member state officials/interested parties to discuss the Women and science agenda and its progress in the last 10 years. For reasons of space however this data has not been fully analysed in this thesis.

[22] http://cordis.europa.eu/home_en.html

Parliament's online legislative observatory OEIL[23]. During question development phases these documents included EU strategic gender equality policy, which has not been included in the final version of the project[24]. Specific DG Research documents were collected using the above online databases, signposting from DG Research staff and at DG Research's Women and Science events. These included legislative documents such as: The Framework Programme, drafts, parliamentary debates and opinions relating to it; 'expert knowledge' monitoring reports and data relating to DG Research gender equality actions; and internal documents which staff supplied. In conjunction with briefing interviews, these sources yielded information on the political structures involved in policy formation and deliberation[25], which in turn began to inform an initial impression of process tracing.

Later stages of documentary analysis moved beyond their exploitation as useful sign-posting, instead engaging interpretively with the meanings embedded within them, the processes of their production, and their social context (May 2001:183). This informed an analysis of documents as a system of interlinking materials helping to stabilize and mobilize particular gender knowledge in line with the theoretical perspective developed in Chapter Two. To access these various levels of information, document creation processes and intended meaning were discussed in interviews with parties involved in their production. Interviews with intended

[23] http://www.europarl.europa.eu/oeil/home/home.do

[24] Findings in DG Research indicated that staff within DG Research made no reference to strategic EU gender equality policy and that the impetus for GM stemmed from events in the scientific community, as is discussed in Chapter Four.

[25] Such as the European Parliament Committee on Industry, Research and Energy (ITRE) which oversees science and research policy, Women's Rights and Gender Equality (FEEM), DG Research's Helsinki Group on Women and Science and the Working Group on Women and Science.

audiences on the other hand sought to uncover how they were received and interpreted. Analysis of the representation of gender issues within them, the gender knowledge they represented (and excluded) was also undertaken. Analysis thus considered three levels of meaning - that which authors intended to produce, their received meanings and their internal meaning (Scott 1990: 34) *and* attention to the interrelation between documents, as well as the processes they were implicated in.

Interviews

In addition to briefing interviews during the early stages of the project semi-structured interviews were undertaken with staff in the Unit driving GM and the two disciplinary sub-Directorates of DG Research. Knowledgeable actors who had been involved in the set up of the DG Research GM apparatus during FP6, who had subsequently changed post, were also interviewed. Most face to face interviews were undertaken during two four week trips to Brussels in February and April 2009, with a six week break between fieldwork trips to allow for initial analysis and the refinement of research questions. Timing of the visits responded to the work commitments and vacation patterns at the European Commission.

A snowball sample technique was used to identify interviewees. Staff in the Gender Unit suggested 'best' and 'worst' case disciplinary Directorates for study and supplied tips and names for relevant individuals to speak to, structuring a sample which included staff who were both 'enthusiastic' or 'knowledgeable' about gender issues in science and those who were 'more disengaged'. Interviews with the latter group proved more difficult to secure and sometimes involved debates about the GM policy. Here, senior staff were helpful in providing assurances that all interviewees' participation would be relevant and appreciated. Knowledgeable

persons associated with DG Research's GM agenda[26] were contacted using named contact persons on DG Research documents and a snowball technique informed by staff in the Gender Unit.

All interviewees gave their permission to be digitally recorded with one exception[27]. Confidentiality was discussed with all interviewees and assurances supplied that write ups would not reveal the personal identity of interviewees. Most expressed a lack of concern, stating a lack of controversy over gender issues, that findings would be published so much later it would not affect them or that they had already discussed what they would disclose in interview with their line manager. Commission policy on the rotation of roles, every 3-5 years, also makes interviewees less vulnerable to identification. Interviews were transcribed in anonymous format, so that individuals could only be identified in terms of their location in either the Gender Unit, DG Research/GM community or one of the two disciplinary sub-directorates. The unrecorded interview was extensively written up immediately following the interview.

Participants were contacted by email and telephone receiving an introduction to the research and a list of bulleted themes for discussion. A topic guide was prepared for each interview. I began introducing myself, usually emphasising my own perspective as an ex-policy consultant, seeking to bridge the gap between real implementation and academic research. I emphasised my interest in the

[26] Two staff who had worked in the Gender Unit during earlier stages of FP 6, a representative of the European Platform for Women Scientists, a consultant involved in the evaluation of GM in FP 6, and two members of the Helsinki Group.

[27] Permission was refused on the grounds that the interviewee did not feel comfortable being recorded having not prepared.

interviewee's own perspective and the way people make sense of new policy. I also mentioned how it may seem odd to include gender in scientific research to some people or sectors. Initial questions were asked about the interviewee's professional background before moving into a discussion of the interviewee's role in, and understanding of, DG Research's policy, including gender dimensions.

Here, the interpretive methodology was frequently challenged by DG Research staff, who often began voicing concerns such as 'its perfectly simple', 'this information could be found online' or 'you'll have been told this already'. However, I always pursued this line of questioning, regarding it as an important source of data on tacit bureaucratic knowledge (Altheide and Johnson 1994:493) particularly in view of staff's assertions that it was too obvious to ask about! Participants were usually persuaded to elaborate when I explained the importance of triangulating and replicate findings, as well as my interest in diverse perspectives.

Early documentary research indicated that interrogating them for discussion of GM would not yield results, a pattern also encountered in interviews. In line with the interpretive approach interviews therefore sought to gather evidence of how staff conceive of their own work, identifying local jargon, the activities which form their daily practice and the context within which they must act and communicate (Johnstone 2000, Wagenaar 2004, Wagenaar and Cook 2003, Lendvai and Stubbs 2006, Laws and Rein 2003 Yanow 1993). Questions were open-ended and exploratory and asked staff to describe their work, encouraging them to discuss how they understood their own practice, the policy priorities in their field, gender issues within it and gender equality dimensions of their own implementation activities. Here, the gender knowledge concept's focus on assumptions about

gender *embedded* within other knowledge was particularly useful and was used to interrogate the data collected. Staff consistently referred to the same policy jargon discussing 'projects', 'the framework', 'impact assessment', and 'GAPs' (gender action plans). Prompts and probes which referred to existing policy, documents of reference or which discussed findings or opinions voiced in other interviews, were also used to develop discussion and triangulate emerging findings.

In total, 24 interviews were undertaken. These comprised four members of staff in the Gender Unit and six knowledgeable persons who were either involved with the GM agenda in DG Research[28] or linked to it in external organizations. These interviews were very useful in describing the apparatus of GM, its set up and its functioning. Six members of staff were interviewed in one disciplinary sub-Directorate and five in the other. Three parliamentarians who had been involved in the Women In Science agenda were also interviewed[29].

Process Tracing

Analysing policy implementation within an interpretive paradigm entails following policy 'wherever it goes', and understanding differing perspectives and interpretations (Yanow 1993, 1996, 2000). Applying a focus on knowledge

[28] This included 2 staff who had worked in the Gender Unit during earlier stages of FP 6, a representative of the European Platform for Women Scientists, a consultant involved in the evaluation of GM in FP 6, and two members of the Helsinki Group.

[29] Originally, I intended that my case study of knowledge processes in DG Research would involve the Parliament as I envisaged a degree of meaning flowing from the Parliament to the Commission and down into implementation. Findings in fact indicated this was not the case. Impetus came from the Commission in line with its responsibility for policy initiation (Nugent 2006:149). Although the findings from analysing these interviews, would have been interesting in itself, they do not form a central analytical focus in this thesis because the Parliament is removed from implementation *and* has not been a driving force in the policy formation and development process. Access also proved more difficult than within the Commission.

processes in turn also entails the application of specific technical concepts designed to identify generic patterns involved in moving information between locations and coordinating action around it (Callon and Latour 1981, Colebatch 2009). Process tracing is clearly therefore a must for this piece of research. The term process tracing has a long history within the social sciences (Falleti 2006) and has been employed to label different methods. Sometimes process tracing is equated with atheoretical descriptions of sequential events, or 'story telling' (George and Bennett 2005:210). More usually however process tracing focuses on causal processes, often within a statistical approach, to test theoretical suppositions (George and Bennett 2005:206).

This is not the conception of process tracing adopted within this interpretive case study, however. This project undertakes a 'theory guided process tracing' (Falleti 2006) where the researcher seeks to provide 'theoretically explicit narratives that carefully trace … the sequence of events constituting the process of interest' (Arminzade 1993: 108, see also Buthe 2002). This kind of process tracing analyses the way in which multiple actions, including the constitution of groups for example (Latour 1986) and the mobilization of texts (Callon and Latour 1981) interact. This perspective is effectively defended by Arminzade

> 'Attempts to explain particular outcomes or patterns of development typically involve the study of multiple rather than single trajectories… acknowledging multiple processes that overlap and intersect one another … [T]he focus is not on the presence or absence of certain variables or on the trajectory of a single process. It is on the temporal intersection of distinctive trajectories of different but connected, long term processes' (1992: 466-467)

It is important to emphasise then that these processes include consideration of the materials mobilizing policy ideas (Law 2003), the pre-existing practices through which these are understood (Wagenaar 2004, Wagenaar and Cook 2003), and the

subsequent actions and interpretations of individuals within the field (Yanow 2000:18). Together, these are gathered to form a credible theoretical depiction of the processes constituting the inter-subjective meanings constituting gender knowledge, whether in the form of gender blindness, gender bias or local working understandings of GM.

To capture operational links the case study was structured to focus on specific methodologically meaningful parts of DG Research. DG Research itself is split into 15 sub units called 'Directorates' each focusing on a disciplinary area of research. Six of these deal with internal or organisational affairs and seven implement policy. The case study thus encompassed the Unit driving GM throughout DG Research and two of the seven policy implementation Directorates. This structure allowed for in-depth analysis of the processes within DG Research spanning policy formation, dissemination and implementation.

Reliability, Generalisability and Validity

All research must refer to some standards to measure its quality and credibility and within the social sciences, reliability and validity are the most popularly applied. Validity refers to the accuracy or truthfulness of an account and reliability to the potential for a different observer to attain the same results (Silverman 2000: 175), and by extension, these measure the research's potential for wider generalisabilty. Both concepts however rest on ontological and epistemological presuppositions associated with positivist, rather than interpretive approaches (Yanow et al 2008:9). The most important cleavage between interpretivist and positivist approaches rests on ambitions to 'objectivity'. An interpretive approach aims to produce a thoroughly contextualised account, which is in turn the interpretation of the researcher (Yanow 2000, Yanow et al 2008:9). Positivist notions of validity and

reliability on the other hand seek to emulate laboratory conditions and to generate generalisable principles: they therefore have limited applicability to interpretive or qualitative approaches (Blaikie 2000 247-248, Bryman 2008:391).

Several steps can however, be taken within an interpretive approach to ensure that research is *credible* (Lincoln and Guba: 1985). Foremost amongst these is an effort to ensure transparency in methods, sampling and analysis so that a thorough explanation and documentation of all stages of theorising, operationalising and analysis is provided, to enable the reader to assess the standard and reliability of the research (Altheide and Johnson 1994: 493, Bryman 2008:393, Yin 2005: 36). Presenting evidence and conclusions separately also allows the reader the opportunity to understand and criticise analysis and findings themselves (Potter 1996:138/139).

Furthermore steps to 'triangulate finding's within a case can be taken so that a solid evidence base is accumulated (Altheide and Johnson 1994: 493, Silverman 2000:177). Multiple sources of evidence have been used within this project: multiple different forms of documents have been collected and interviews with four different communities undertaken with the aim of creating a credible account of competing local understandings which encompass a large proportion of the implementation world (Yanow et al 2008). These data have also been analysed on different levels and within relationship to each other – reading each of the disciplinary Directorate case studies through each other to provide a way of seeking both how things are and how they are not (Yanow 2000:9). Secondly, respondent validation has been used (Bryman 2008:377). During interviews I often presented examples of understandings for the interviewee to comment upon or challenge, seeking to ensure that data represented '*their* conceptual boxes' (Yanow 2000:23). Findings

have also been discussed with key informants, though owing to time constraints those contacted expressed a preference for informal discussion of findings.

Conclusion

This chapter has given a full account of the processes through which this research was conceived and has discussed the research strategy, methods and research design involved in its completion. Using a grounded theory approach, this project has attempted to let findings and concepts emerge from the data itself – documents presented a picture of activity in response to GM which I wished to render intelligible. This approach thus attempts to 'close[s] the embarrassing gap between theory and empirical research' (Glaser and Strauss 1967 in Strauss and Corbin 1994); it has used concepts drawn from interpretive methods and STS/SK combining them with gender theory to respond to the challenges of operationalising gender as a process or an organizational characteristic, which gender scholars have documented (Beckwith 2005, Duerst-Lahti and Kelly 1995; Hawkesworth 1994, Lovenduski 1998, Mackay 2004, Randall 2002). After discussing research strategy, this chapter then turned to discuss the interpretive approach in more detail and the case study design employed, before discussing the methods used, including document analysis, interviewing and process tracing. Finally this chapter discussed the measures taken to ensure research quality and credibility. The next chapter presents the empirical material of this thesis starting with an introduction to the policy processes and structures present in DG Research, before moving on to discuss GM apparatus and processes.

4

Chapter Four DG Research Structure and Policy Practices

This Chapter begins to apply the theoretical approach, elaborated in Chapters Two and Three, to the empirical case study DG Research. The Chapter has three sections. The first provides an overview of the administration of EU science and research policy in terms of the actions it undertakes. Here, DG Research's policy making processes are discussed in terms of a knowledge process as described in Chapter Two. The documents and associations, through which shared perceptions of the policy agenda are stabilised, so that action can be coordinated around them, are presented. In this section, I also draw a distinction between three phases or stages of policy stabilisation: strategic policy formation, policy interpretation and policy implementation. Understanding these processes lays the foundation for wider discussion of attempts to insert and stabilise new policy ideas, such as unfamiliar concerns regarding gender inequality.

The second section discusses how the version of the science *problematique,* dominant in DG Research prior to the adoption of gender mainstreaming (GM) in the Framework 6 period, excluded explicit discussion of any gender (in)equality problems. I then describe the processes through which GM was adopted in DG Research and the GM policy apparatus which was established This analysis points out the 'vacuum' into which the notion of GM entered in DG Research: staff involved, report an initial situation characterised by institutionalised gender blindness and a complete absence of data and information. This analysis demonstrates how gender inequality was institutionalised as an 'acceptable

unknown'. Those establishing GM describe how they subsequently *investigated* gender equality, drawing on existing knowledge and experts to elaborate a relevant understanding of the policy problem that could be translated into action in DG Research. The content of this new knowledge and methods through DG Research subsequently attempted to coordinate action around the new dimension of science policy content which it articulated, are presented.

In the third concluding section I review the insights supplied by this approach. I argue that these policy making processes constitute large scale knowledge processes whereby the ways of knowing, which are available to DG Research staff during their work, are pre-constituted. These ways of knowing systematically highlight or minimise particular perspectives of, or interests in, the science policy agenda. Prior to Framework 6 they recursively excluded the consideration of gender inequality, institutionalising its non-perception. Reviewing GM activities I argue that the Gender Unit (see below) attempted to create policy structures which could coordinate action around a new perception of gender inequality, inserting its consideration into multiple policy stages, including action.

DG Research Mission Statement, Tools and Scope

Research and technological development have long been an important area of policy for the EU, beginning in the field of nuclear research in the 1957 Treaties of Rome through Article 55 of the European Steel and Coal Community; Articles 4 to 11 of the European Atomic Energy Community ('Euratom'); and Articles 35 and 308 (41 and 235) of the EC Treaty.

The remit was broadened by the Council Resolution of 14 January 1974 on the coordination of national policies and the definition of projects of interest to the Community in the fields of science and technology[30]. The Commission's role is restricted to actions which help to coordinate research activity, where the EU can 'add value' as a facilitator, encouraging methods and qualifications to harmonise research outputs. In 1998 the budget for research expenditure covered approximately 60% of the expenditure for the EU's internal policies[31]. Research remains an area where member states retain complete control over their own policy.

Figure 4-1: DG Research Mission Statement

DG Research's current mission as stated on its website is:

- to develop the European Union's policy in the field of research and technological development and thereby contribute to the international competitiveness of European industry;
- to coordinate European research activities with those carried out at the level of the Member States;
- to support the Union's policies in other fields such as environment, health, energy, regional development etc;
- to promote a better understanding of the role of science in modern societies and stimulate a public debate about research-related issues at European level.

Source: http://ec.europa.eu/dgs/research/index_en.html .

DG Research's main policy instrument is a multi-annual research-funding package called the Framework Programme. 'The Framework' describes the scientific and technological objectives and priorities for the EU, and allocates funds to activities

[30] European Parliament 'Legal Basis Policy for research and technological development', http://www.europarl.europa.eu/factsheets/4_13_0_en.htm.

[31] European Parliament 'Legal Basis Policy for research and technological development', http://www.europarl.europa.eu/factsheets/4_13_0_en.htm

undertaken by research centres and universities, know as 'indirect actions'[32]. The allocation and monitoring of these funds through the Framework Programme comprises DG Research's key activity and the focus of this Thesis.

Since the nuclear Euratom research programme was established prior to the wider programme of EU research, its priorities are still detailed in a separate framework, pertaining only to the Euratom programme .[33] Both Frameworks are updated every 4-7 years at the same time.

Each updated version of the Framework contains reference to the Treaties and 'sections 163(130f)', reproduced from the Single European Act (Luxembourgh 1986) which established that the Framework Programme(s) should 'strengthen the scientific and technological bases of Community industry and encourage it to become more competitive at an international level'. These articles also established the 'four activities' of the Framework:

- supporting research
- promotion of cooperation
- dissemination and optimisation of results

[32] The Framework also funds a network of seven EU funded research institutes known as the Joint Research Centre, (JRC). These 'direct actions' (http://ec.europa), have not been included in this project's analysis.

[33] The 'rules of participation' which dictate who may receive funds and for what purpose are more restrictive in this framework in keeping with sensitivities over the development of nuclear technologies, Iran for example is explicitly excluded as a third party partner.

- and the stimulation of training and mobility[34] (Dinnan 2005: 435, European Parliament and The Council 2002:1).

Mention of socially motivated research expenditure, or goals concerning welfare, public health, or a clean environment, are not explicitly contained in these articles. Scope for these dimensions was created in 1993 through the addition of the phrase 'while promoting all the research activities deemed necessary by virtue of other Chapters of this Treaty' as part of the Maastricht Treaty Article 165, which also states that 'The Community and the Member States shall coordinate their [….] activities so as to ensure that national policies and Community policy are mutually consistent.'[35]

These aspects remain constant and are repeated each time the Framework is renewed or updated. Explicit reference to the Lisbon agenda's commitments to sustainable economic growth, employment and social cohesion and environmental dimensions, are also contained within these Framework documents.

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[34]Decision No 182/199/EC of the European Parliament and of the Council concerning the sixth Framework Programme of the European Community for research, technological development and demonstration activities 1998-2003, European Union European Parliament and The Council; Decision No 2002/ / EC of the European Parliament and of the Council concerning the sixth Framework Programme of the European Community for research, technological development and demonstration activities contribution to the creation of the European Research Area, European Union European Parliament and The Council.

[35] European Parliament 'Legal Basis Policy for research and technological development', http://www.europarl.europa.eu/factsheets/4_13_0_en.html.

Strategic Policy Content: Framework Themes and Priorities Framework 5 and Framework 6

Whilst the very highest strategic aims of DG Research have been reproduced in stable form through quotations from the founding treaty, the Single European Act, Maastricht Treaty and the Lisbon agenda, thematic research priorities have shifted and interpretations of the appropriate route to goals such as competitiveness have varied between Frameworks.

Framework 6

This project focuses on policy making and implementation pertaining to the 6th Framework Programme (2002 – 2006) period. The 6th Frameworks[36] emphasised coordination and added value in research, particularly through the notion of the European Research Area (ERA), a policy goal established in the Lisbon Treaty (2000) in response to 'structural weaknesses' in Europe's science and research sector, as part of wider policy to increase and maintain Europe's competitiveness (http://ec.europa). A 2000 Communication on the ERA[37] elaborated the concept and is explicitly bound into the text of both the 6th Frameworks and discussed in the Explanatory Memorandum attached to them[38].

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[36] i.e both the 'mainstream Framework' and the Euratom one.

[37] Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions of 18 January 2000: Towards a European research area COM(2000) final and Council of the European Union (2002) common Position Adopted by the Council on the 28th of January 2002 with a view to the adoption of a Decision of the European Parliament and of the council concerning the Sixth Framework Programme of the European Community for research, technological development and demonstration activities, contributing to the creation of the European research area and to innovation (2002-2006).

[38] E.g. Explanatory Memorandum Amended Proposals for Council Decisions concerning the specific programmes implementing the Sixth Framework Programme of the European community for research technological development and demonstration activities and

The notion of the ERA symbolises the goal of an 'internal market' for research where researchers, technology and knowledge freely circulate; initiatives are implemented at the EU level; and national and regional research activities are coordinated at the European-level[39]. Activities aimed at creating the ERA focus on researcher capacity-building and added EU value through coordination and sharing of results. To this end, actions 'to effectively use all human resources in the population as effectively as possible and to conduct research on human resources and policy issues at the European and MS level' were included in both Frameworks. The Explanatory Memorandum also re-emphasises the commitment to competitiveness and highlights the need for science to address social aspects noting 'the EU is now facing and will in all probability have to face in future more and more problems significantly affecting the economy, society and citizens for which science holds the key to a large extent'[40]. Specific crises such as BSE are cited as examples proving the need for science to serve society. Further commitments to a knowledge driven economy were also made in the 2000 Communication on Innovation in a Knowledge-Driven Economy.[41]

On this basis the 6th Framework not only funded 'actual' scientific research but also research on member state policy and activity in both the industrial and publicly

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concerning the specific programmes implementing the Sixth Framework Programme of the European Atomic Energy community for research and training activities http://www.iglortd.org/Content/FP6/Com02_43en.pdf

[39] Commission of the European Communities (2007) Green Paper, The European Research Area: New Perspectives, Brussels, 4.4.2007, COM(2007) 161 final.

[40] ibid.

[41] European Parliament resolution on the Communication from the Commission to the Council and the European Parliament on Innovation in a Knowledge-Driven Economy (COM(2000) 567 C5-0740/2000 2000/2336(COS)).

funded sectors. This research aimed to support the development of its own and member states' policy towards the established aims of competitiveness, innovation and the ERA. In 2000, closely timed with the Communications on the ERA and on Innovation in a Knowledge-Driven Economy, the Commission also produced the Communication on Women and Science (discussed below). All three of these are referenced in the Framework Programmes.

The thematic topics for research are also revised each time the Framework is updated. In Framework 6, seven thematic priorities were established. These included the topic of 'Science and Society' a field focused on supplying the necessary knowledge and information to ensure that the harnessing and exploitation of knowledge and research is properly understood and disseminated (European Union, European Parliament and The Council 2002: 35). This emphasis on Science and Society is further accompanied by attention to the social implications of research, effective science governance, justice, and sustainable economic and social development as a horizontal theme.

Figure 4-2: Framework 6 Themes and Priorities[42]

The Sixth Framework Programme (FP6) covering 2002-2006 was structured around three headings:

- Focusing and integrating Community research
- Structuring the European Research Area; and
- Strengthening the foundations of the European Research Area

It set out seven thematic priorities in which these three 'headings' will be pursued:

- Genomics and biotechnology for health
- Information society technologies
- Nanotechnologies, new materials and production processes
- Aeronautics and space
- Food quality and safety
- Sustainable development, global change and ecosystems
- Citizens and governance in a knowledge-based society
- Nuclear Energy (Euratom)

The sixth Frameworks contained commitments to use new instruments named 'Networks of Excellence' and 'Integrated Projects' towards the achievement of these goals. Networks of Excellence aim 'to strengthen and develop Community scientific and technological excellence by means of the integration at the European level, of research capacities currently existing … at national and regional levels … to foster cooperation [and] will be generally targeted towards long-term multidisciplinary

[42] Council of the European Union (2002) Common Position Adopted by the Council on the 28th of January 2002 with a view to the adoption of a Decision of the European Parliament and of the council concerning the Sixth Framework Programme of the European Community for research, technological development and demonstration activities, contributing to the creation of the European research area and to innovation (2002-2006).

objectives rather than redefined results in terms of products processes or services'43. Integrated Projects are designed 'to mobilise a critical mass of research and technological development resources and competences. Each should be assigned clearly defined scientific and technological objectives and should be directed at obtaining specific results … in terms of, for instance, products processes or services'44. These two new instruments were intended as the central tools in the thematic priorities for research and are supplemented by 'specific targeted research or innovation projects' and 'actions to promote and develop human resources and mobility' and 'coordination actions'.[45]

Framework 5

The strategic aims of competitiveness established in Articles 161(130f), though also present in the predecessor fifth Framework Programme (1998-2003), set forth a slightly different interpretation of competitiveness and the routes to its achievement. It emphasised the use of technology, firstly to provide the conditions for a high quality of life and personal and material development and secondly 'to solve problems' and develop the technologies and expertise necessary to face up to modern challenges in fields such as employment, health, environment, energy

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[43] Common Position adopted by the Council on 28th January 2002 with a view to the adoption of a Decision of the European Parliament and of the Council concerning the Sixth Framework Programme of the European Community for research, technological development and demonstration activities contributing to the creation of the European Research Area and to innovation (2002-2006): Annex III;3.

[44] ibid: Annex III:2.

[45] Council Decision of 3 June 2002 concerning the sixth framework programme of the European Atomic Energy Community for nuclear research and training activities also contributing to the creation of the ERA (2002 – 2006) Annex III: 1. http://cordis.europa.eu/documents/documentlibrary/57025591EN6.

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supply, transport and mobility, education and training[46]. Similar to Framework 6, Framework 5 emphasised human resources, though it focused on the achievement of a critical mass of researchers necessary for competitive research. Four thematic areas for research were identified (see below). The inclusion and consideration of the socioeconomic implications of technologies was also emphasised as an integral focus of research in all fields. DG Research's online literature relating to Framework 5 emphasises that the fifth framework differed from predecessors in this regard; Common Position adopted by the Council on 28th January 2002 with a view to the adoption of a Decision of the European Parliament and of the Council concerning the Sixth Framework Programme of the European Community for research, technological development and demonstration activities contributing to the creation of the European Research Area and to innovation (2002-2006): Annex III;3 it contained an emphasis on research activity to tackle the socio-economic problems where the public expected to see change.[47]

[46]Common Position adopted by the Council on 28th January 2002 with a view to the adoption of a Decision of the European Parliament and of the Council concerning the Sixth Framework Programme of the European Community for research, technological development and demonstration activities contributing to the creation of the European Research Area and to innovation (2002-2006): Annex III;3.

[47]http://ec.europa.eu/research/health/5th-framework-programme_en.html.

Figure 4-3: Framework 5 Themes and Priorities

The fifth Framework Programme covering 1998-2003 was structured around four horizontal themes:

- Confirming the international role of community research
- Promotion and encouragement of small and medium sized enterprises
- Improving the human potential and the socioeconomic knowledge base
- Activities of the Joint Research Centre[48]

It set out four thematic priorities:

- Quality of life and management of living resources
- User friendly information society
- Competitiveness and sustainable growth
- Energy environment and sustainable development

DG Research Structure

DG Research itself is structured into sub-units called 'Directorates' which mirror thematic priorities identified in the Framework. DG Research's precise structure therefore changes with each revision of the Framework. Each Directorate is further sub-divided into Units, staffed by 'Scientific Project Officers' (SPOs) and a Head of Unit. Each Directorate also has one 'Horizontal Unit', which coordinates between the others.

[48] The Joint Research Centre, is part of the 'direct actions' which this Thesis has not investigated.

Figure 4-4: DG Research Directorate Structure During FP6

Directorate A - Inter-institutional and legal matters – Framework programme

Directorate B - European Research Area: research programmes and capacity

Directorate C - European Research Area: Knowledge-based economy

Directorate D - International cooperation

Directorate E – Food Quality and Safety

Directorate F - Health

Directorate G - Industrial technologies

Directorate H - Transport

Directorate I - Environment

Directorate J – Nuclear Energy - Euratom

Directorate K - Energy

Directorate L - Science, economy and society

Directorate R - Resources

Directorate S - Relations with the ERCEA

Directorate T - Relations with the REA agency; Marie Curie, SME and NEST, policy and actions[49]

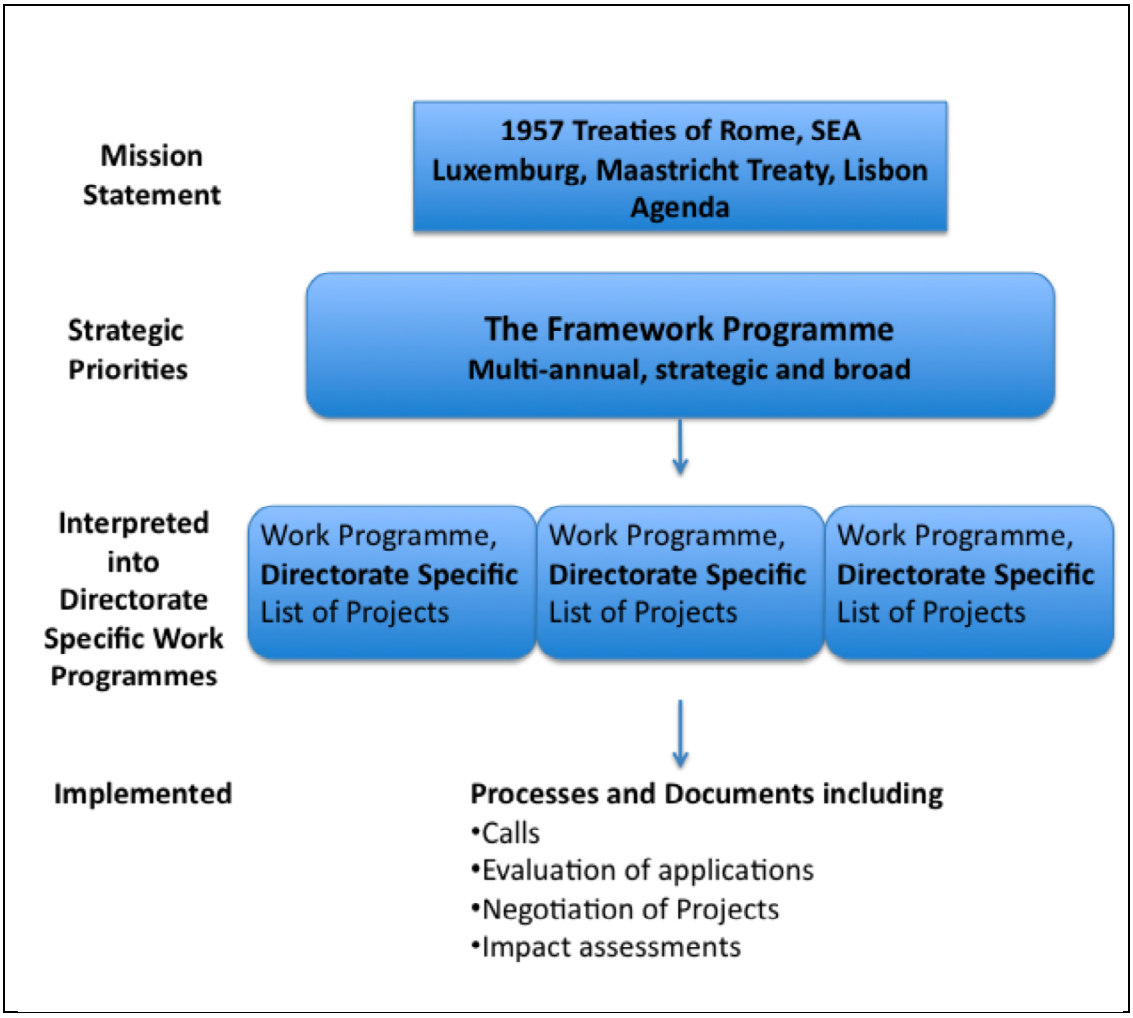
(Directorates D-L, bold, implement thematic sections of the Framework Programme. These are as a result referred to as 'operational' Directorates.)

[49] During Framework 7 DG Research has subsequently been renamed 'DG Research and Innovation'and some interesting thematic re-organisations have also occurred – Nuclear/Euratom has for example been subsumed into the Directorate K for Energy.

Stabilising Aims and Action in DG Research: documents

The policy making processes of EU science and research policy are heavily structured and convoluted, resulting in a policy making process which is complicated and repetitious. Policy aims are set, interpreted and implemented over several stages, duplicating the participation of multiple actors. This overview of DG Research policy making processes therefore attempts to render a complex set of processes sufficiently succinct to render it intelligible, whilst also representing the repetition which these processes entail. Directorate case studies in chapters six and seven will explore and present some of these processes in closer detail. It is useful at this juncture however, to conceptualise policy development and implementation in DG research in terms of stages of documents; moving from the highest level documents defining the mission statement (the Treaties) through to strategy (the Framework), and implementation documents (see Figure 4.5).

Figure 4-5 Policy Documents/Stages in EU Science and Research



As the above figure illustrates, at the highest strategic level DG Research's mission statement is drawn from the Treaties (Rome, SEA, Maastricht, Lisbon), which are cited in each updated Framework. The Framework Programme in turn documents the strategic priorities for the EU each time it is revised, every four to seven years. Following the establishment of the Framework, strategic priorities are translated into actions and listed in a document called The Work Programme. The Work Programme details projects which will fulfil specific thematic or strategic aims. Finally, policy is implemented through heavily structured and tightly documented

processes: calls for projects, applications to undertake research, evaluations of applications, and negotiations with projects, as well as reporting, monitoring and impact assessments. These processes are all undertaken in a highly structured manner according to predefined procedures set out in implementation documents such as application forms, and monitoring and reporting databases.

Devising Strategic Policy in DG Research

Fieldwork interviews indicate that the drafting of the Framework is a complex endeavour. In theory the Framework is drafted by DG Research before submission to the European Parliament and the Council. In practice however the content, which the Commission drafts in its proposal for the Framework, is a result of rolling consultation practices, which all Directorates engage in. A number of permanent consultative mechanisms facilitate these processes which are represented in Figure 4.6.

Written drafting of the Framework begins with each Unit Head convening their staff (SPOs) to brainstorm themes and priorities for research in their field, working within any guidelines set down by the Commissioner, the Director General of the Directorate or the Council and the 'inheritance' of the previous Framework[50] (Nugent 2006: 163). SPOs work on the basis of their knowledge of their own disciplinary area, garnered from contact with stakeholders (through conferences, project administration and consultation mechanisms) and use written project impact assessments based on inputs from stakeholders, internal and external evaluations and other studies, to inform their research priorities (Commission of the European Communities 2005a:13).

[50] Research Interview, Spring 2009, Gender Unit Staff Member B.

This is further supplemented in turn by reference to formal permanent consultation mechanisms including European Technology Platforms (ESPs), Programme Committees and Advisory Committees. ESPs are intended to provide industry-led[51] member state level representation of the scientific community at the strategic policy level[52]. Advisory Committees comprise experts in their field, nominated by DG Research. Programme Committees on the other hand are composed of experts nominated by member states. After units have drafted activities on the basis of their disciplinary knowledge, they are then passed up through the Horizontal Unit of each Directorate and its head, the Director General for Research, the Commissioner's cabinet and on for Co-decision in the Parliament and the Council.

Within the Parliament the Industry, Transport, Research and Energy (ITRE) Committee has responsibility for Science and Research Policy. In theory it may comment on policy only during the co-decision procedure after it has been developed in DG Research. In practice, DG Research communicates with the relevant actors in Parliament before policy is voted upon[53]. After the Commission submits a policy proposal the ITRE Committee can suggest amendments, which the Commission may reject, returning it to the Commission, for up to three readings. ITRE members represent the interests of their member states, as do the members of the Programme Committees who are consulted by DG Research in drafting the policy proposals. ITRE is also lobbied by interest groups including the European

[51] Research Interview Spring 2009, Directorate J Operational Staff Member N

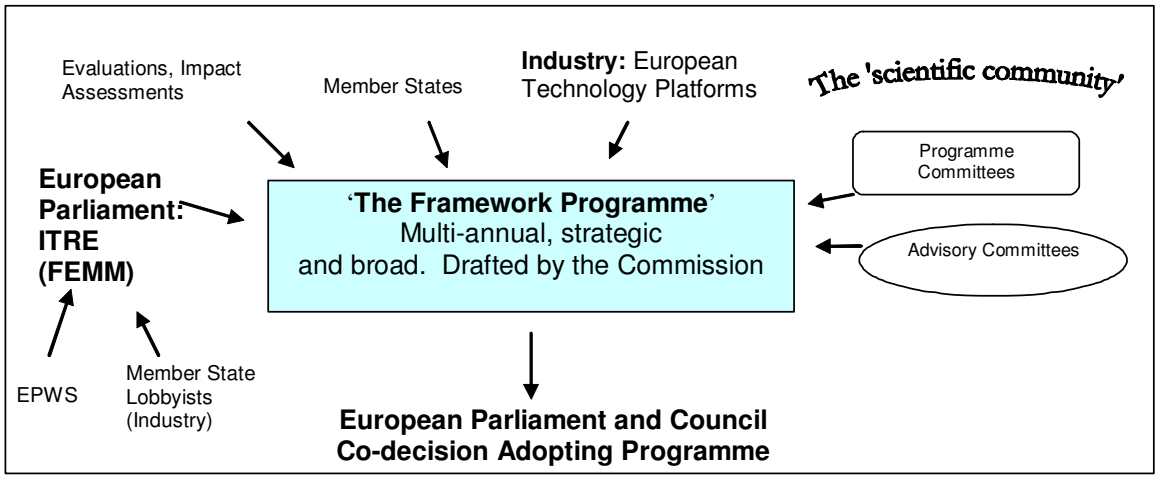
[52] Commission of the European Communities 2005a:13.

[53] http://www.ec.europa.eu/research.

Platform for Women Scientists (EPWS)[54]. The Parliamentary Committee on Women's Rights and Gender Equality can also comment on gender equality aspects of the Framework. Furthermore, The Council reads the Commission's policy proposals – looking at the content of the Framework, accepting the Parliament's amendments or producing a 'Common Position'. The Framework is finally voted upon by the Parliament and the Council in a process of co-decision, producing a 'Decision'. [55] Thus, multiple actors are represented and consulted during complex and repetitive processes deciding strategic policy, which encompass both formal procedures and informal practices. A simplified representation of the actors involved in the establishment of the Framework is shown in Figure 4:6.

[54] Research Interview, Spring 2009 'Expert'.

Figure 4-6 Summary of Groups and Actors in Strategic Policy Development in EU Science and Research



Interpreting and Acting On Strategic Policy: Implementation

Once the content of the whole multi annual Framework Programme is confirmed, SPOs and Unit Heads in each Unit create a local Work Programme. The Work Programme responds to the broader thematic priorities of the Framework Programme, translating them into proposals for research relevant to the local discipline (e.g. health), describing exactly what projects and activities will be funded. It is devised with the oversight of the Head of the Directorate and in conjunction with the scientific community through two formal mechanisms: the Advisory Committee and the Programme Committee (which are also involved in the development of The Framework).

SPOs subsequently implement policy. As the Framework and its allocation of funds is the main instrument of EU Science and Research policy, this implementation work primarily comprises the allocation and administration of funds to support research. The processes this requires include:

- Writing 'Calls' - Calls are published on the Directorate's website. They describe DG Research's aims and requirements for an area or a project and invite responses;
- Screening applications for eligibility - In order to be considered, a project must fulfil eligibility criteria, if these criteria are met the project is evaluated by experts drawn from DG Research's database;
- Evaluation - SPOs pass applications to 'evaluators' drawn from a database which Directorates maintain, who evaluate projects. These evaluators are experts in their field drawn from a database which DG Research maintains.
- Negotiation - if an application is successful, SPOs begin a process of negotiation where they discuss any changes which the Directorate requires or suggests in the research project;
- Reporting - SPOs are also responsible for ensuring that projects adhere to mid-term, periodic and final reporting requirements on results and impact assessments.

Finally, SPOs are also involved in the dissemination of results through the production of publications reviewing their Unit's work and participation at conferences. These results and findings are in turn fed back into policy creation.

Coordinating Action in DG Research

This analysis reveals three analytically important phenomena. Firstly, it demonstrates the local understanding of the science policy problematique around which action is coordinated in DG Research and secondly the methods through which this is achieved. Thirdly, it highlights the processes and practices through which the DG Research policy remit is known by staff and actors participating in it and through which action is coordinated.

Competiveness and the instrumentalisation of science in order to achieve it, has formed the dominant understanding of science and research around which DG

Research mobilises resources and people since the inception of the DG. This notion has been reproduced in the Framework through reference to the 1957 Treaties of Rome, sections 163(130f) of the Single European Act and more recently Maastrict and the Lisbon Agenda. The Framework therefore serves as a reference point to establish a broad notion of the role of science in the EU and combine DG Research policy 'heritage' with science specific issues such as experiences with the BSE crisis and wider EU policy priorities established in the Single European Act, Maastricht, and the Lisbon Agenda. Policy is further re-defined into discreet actions, which deliver on these aims in implementation documents.

Considering the hierarchical relationship between these documents reveals how strategic aims must be translated into workable actions: abstract commitments to boost 'competitiveness' do not entail a prescription for coordinated action. Rather, translating these aims into action requires the stipulation of tools, contact with the scientific community in its discreet disciplinary areas, and the discipline-specific knowledge which SPOs acquire through their professional experience. Participation in this translation, therefore forms an important part of DG Research staff's work. The separation of these processes into a suite of documentary stages, which progressively narrow the scope and options of policy activity as they move closer to implementation, (summarised in Figure 4.7) serves however to control and contain these processes.

Figure 4-7 Hierarchy of Policy Documents in Research Policy and Implementation

	Treaties	**Framework**	**Work Programme**	**Implementation Docs**
Relationship to other Documents		**Is premised on** mission statement in Treaties.	**Is premised on** Framework strategy	**Are premised on**: Work Programme and the Framework
Actors producing	Member States	Commission (SPOs, Heads of Units, Director General, Commissioner), ITRE Committee, Council	SPOs, Heads of Units, Director General, Commissioner	Heads of Units, Director General, Commissioner
Defines	**Defines the four activities**: supporting research, promotion of cooperation, dissemination and optimisation of results: and the stimulation of training and mobility; and the **mission statement**: competitiveness, coordination, supporting other fields research needs	**Defines**: current strategy to achieve goals in mission statement • instruments, • thematic areas for research • structure of DGR • consultative obligations • accountability mechanisms e.g. impact assessment procedures	**Defines** workable projects fulfilling strategy	**Define and structure** administration of projects committed to in Work Programme
Scope	Fundamental, very general, somewhat flexible	General and strategic: scientific/ competiveness issues. Narrows focus of DG Research's thematic interests	Precise: operational and discipline/research sub-theme specific.	Inflexible: project specific, restrictive and prescriptive
Actors consuming	Commission (SPOs, Heads of Units, Director General, Commissioner),ITRE Committee, European Council	Commission (SPOs, Heads of Units, Director General, Commissioner), ITRE Committee, European Council	Commission (SPOs, Heads of Units, Director General, Commissioner)	SPOs, Commission internal processes, scientists in project teams.

These separations limit the potential for chaos and help to render activity stable. At each stage along the documentary process, only selected elements of the policy agenda can be renegotiated, whilst fundamental assumptions are progressively reiterated. Splitting the negotiation of fundamental aims, strategy ad action into sequential stages, enables the delegation of discipline-specific policy interpretation to SPOs 'on the ground', whilst containing the range of their interpretation and negotiation, within pre-defined aims. SPOs experiential/administrative knowledge is thus instrumentalised to translate pre-defined strategic aims into workable actions.

By corollary, this separation means that DG Research staff and other policy actors such as Programme Committees cannot overturn the organisational focus on competitiveness, when participating in the negotiation of the Framework or the Work Programme. Thus, each of these actors or associations are mobilised around the notion of 'science for competitiveness' and compete to negotiate within this notion, the multiple assumptions it implies and a menu of pre-defined policy tools (e.g. coordinating actions or Integrated Projects). Through the establishment of this agenda, many competing notions of the role of science and the route through which it could contribute to society are minimised or excluded.

This analysis also highlights how bulk of this negotiation work is also largely separated from administration itself. When SPOs undertake their work of implementing policy they do so within a heavily structured environment, which is the product of larger-scale on-going collective processes. SPOs writing calls or negotiating with project teams do not necessarily hold DG Research's mission statement in mind. Their actions when undertaking these tasks nonetheless contribute to the achievement of pre-established goals based on pre-established

notions of the science policy problematique. Thus, although SPOs must interpret policy in order to make DG Research function, each individual can make only comparatively minor alterations or compromises with project participants when administering policy or when contributing to the Framework or the Work Programme.

Mainstreaming Gender in DG Research

This highly structured and repetitively renegotiated policy arena, where an understanding of scientific policy as an issue of competitiveness is recursively represented and stabilised in multiple stages, is the environment into which attempts to mainstream gender equality actions enter. Examining the activities that have constituted the establishment and implementation of GM, we can distinguish three phenomena. Firstly, the analysis which follows shows how the gender equality agenda originated outside DG Research in the face of internal institutional silence on gender inequality. New, externally generated data played a significant role in this. Secondly we can observe processes of interpretation and synthesis whereby individuals charged with the gender equality agenda translate notions of gender equality into DG Research's existing tools and policies. Thirdly, the tactics to stabilise these new assertions of the relevance of gender and coordinate action around them, bear similarities to the policy processes reviewed in the previous section.

Challenging Gender Blindness

Interviews with staff in the Gender Unit, a structure established in order to implement GM (see below), repeatedly contained reports of an institutionalised lack of awareness of gender inequality within DG Research and also the scientific community. Although the competitiveness agenda has more recently been

interpreted with a 'social' slant through concepts such as the ERA and scientific solutions to socio-economic problems, gendered policy aspects or gender inequality, are not noticeably present within the suite of documents constituting DG Research's strategic policy. Whereas all the Frameworks and Work Programmes have progressively reiterated DG Research's mission statement and strategic aims of increasing competitiveness, only one sentence in Framework 5 mentions to gender equality. It stated that DG Research should: 'encourage the participation of women in the field of research and technological development' 56 but it did not elaborate what such action could entail. This non-perception of gender issues encapsulated by the view 'No data, no problem, no policy"[57] had therefore been stable and officially unchallenged in DG Research for some time. From strategic policy, down to impact assessment and the negation of the Work Programme and projects, action in DG Research was co-ordinated around a notion of science as a means to competitiveness. Attention to gender (in)equality was absent within this formulation and any disparity between the sexes was not considered, perceived or acted upon.

Problematising Gender Inequality

The processes which led to the uptake and implementation of GM in DGR began in late 1998/early 1999 when Framework 5 projects were being administered, and the negotiations for the next Framework, Framework 6 were underway.

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[56] Decision No 182/1999/EC of the European Parliament and of the Council concerning the fifth framework programme of the European Community for research, technological development and demonstration activities (1998 to 2002), European Parliament and the European Commission (1998).

[57] Stocktaking 10 years of Women in Science policy by the European Commission 1999-2009, European Commission Directorate General for Research: http://ec.europa.eu/research/science-society/document_library/pdf_06/stocktaking-10-years-of-women-in-science-book_en.pdf

At this time two scientifically prestigious articles that argued the presence of a serious gender equality issue in science, *The Status of Women Faculty in MIT* (MIT 1999) and *Nepotism and Sexism in Peer Review*, published in *Nature* (Wennerås & Wold 1997) had received extensive publicity. Their findings shocked the scientific community and prompted the then Commissioner for Research, Edith Cresson, to indicate a desire to 'do something' on gender equality in science to her staff[58].

The *Nature* and *MIT* publications demonstrated the presence of a serious gender equality issue in science. Both used stereotypically (natural) scientific methods such as longitudinal quantitative analysis or statistical regression, rather than qualitative or normative arguments. Headline findings included for example that female post doctoral applicants needed to publish 2.5 times more publications than male counterparts to achieve the same competency scores as male candidates during (non-blind) peer review processes which allocated research funding (Wennerås and Wold 1998:342). The MIT publication on the other hand showed inequitable distribution of space, salary, teaching assignments, awards and distinctions, inclusion on important committees and assignments within the departments, which persistently and systematically disadvantaged women.[59] Both argued that the pervasive perception that science was meritocratic, fair and equitable was unfounded in light of new data.

Spurred by these events the Commissioner for Research charged one member of staff with mainstreaming gender in DGR. This member of staff described during interviews how awareness, including her own, of gender issues in science or what a

[58] Research Interview, Spring 2009, Gender Unit Staff Member B.

[59] A Study on the Status of Women Faculty in Science at MIT, (1999), Massachusetts Institute of Technology.

suitable policy response might entail, was absent: 'My past was more gender blind ... I was typically the woman saying if I can do it others can do it … I think almost nobody knew about the gender issue'[60]. At this stage then, the situation of the sexes in science was institutionally unknown in DG Research and the scientific community in general. No data concerning women's participation in science existed. Neither did research or information on the gendered impacts or dimensions of DG Research's policy.

This member of staff's first action was to begin compiling expertise on gender, forming two working groups. The first was comprised of external experts on gender, such as personnel from DG Employment, DG Education and Visual Culture and academics from member states, who were already familiar with the gender issue. Secondly, a small number of DG Research staff were drawn into a group to examine the policy possibilities within DG Research.

> 'They were knowledgeable on the gender issue which I wasn't at all … I was really taking knowledges from the ones knowing the women's issues and I was analysing them with the DGR policy, how we can mainstream gender. Because you need these two knowledge's.'[61]

This group devised a suite of policy actions and structures to implement GM in DG Research. With the support of the Commissioner for Research Edith Cresson and a very experienced member of parliament in the ITRE Committee in Parliament, Erly McNally, these actions were detailed in several documents. These served to

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[60] Research Interview, Spring 2009, Gender Unit Staff Member B.

[61] Research Interview Spring 2009, Gender Unit Staff Member B.

mobilise a new knowledge that argued gender as a relevant factor in science policy and DG Research activity.

Establishing a Gender Mainstreaming Agenda

The first output of this process was the 1999 Communication 'Women and Science - Mobilising Women to Enrich European Research'. With the political clout of the ally on the ITRE Committee and support from the Women's Rights Committee (FEMM) in Parliament, this Communication was supported with a non-legislative Parliamentary resolution[62], underpinned by European Parliament opinions from both the ITRE and the Women's Rights Committee and a Council Resolution[63].

The 14 page Communication stated the parameters of the gender issue in science for the first time in DG Research, presenting arguments for tackling it, the actions DG Research would undertake and formalising the existence of a Gender Unit [64]. The staff member coordinating its creation described the document as a moment of knowledge creation.

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[62] Resolution of the European Parliament on the 3rd of February 2000 on the Commission Communication 'Women and Science - Mobilising Women to Enrich European Research'.

[63] Council Resolution on 20th May 1999 Science and Society and on Women and Science.

[64] The precise institutional status of the Gender Unit has changed several times since its inception. At its inception it had no formal status, later being formalised as a Unit in keeping with usual DG Research Structures, as part of the Directorate L, Science and Society. Informally however, its staff were granted greater access to the Commissioner for Research than would usually be the case. In this regard its head of Unit enjoyed the autonomy and access to decision making hierarchy usually granted to a Head of Directorate. The Gender Unit's status has subsequently been changed twice again, changing in size, taking on additional responsibilities and loosing its privileges of access to the Commissioner.

> 'It was a way to understand and translate the collective thinking, for example to recognise that research for women is not only counting women in labs. It's *by*, *for* and *about*, putting together all the different dimensions which research, women and science have to be thought through. So it is counting women yes, of course, making sure research serves women's needs and researching the gender issue itself'[65].

This Communication, the Parliamentary opinions and the Council Resolution state the relevance of gender (in)equality to DG Research through reference to the EC Treaties of Rome, the 1996 EU Communication on the integration of Equal Opportunities and wider generic EU policy such as the Amsterdam Treaty (see **Figure 4-8**).

[65] Research Interview, Spring 2009, Gender Unit Staff Member B.

Figure 4-8 Excerpts: References to Existing Gender Equality Commitments in the 1999 Communication 'Women and Science Mobilising Women to Enrich European Research'

Pre-existing EU Policy Commitments to Gender Equality

- Treaty of Rome 1957
- Articles 2 and 3 of the Treaty of Amsterdam which establishes the equality of opportunity as one of the EU's objectives;
- The new articles 13 and 141 which enable the undertaking of measures to be taken against discrimination and provide a legal basis for action;
- The 1996 Commission Communication on mainstreaming equal opportunities into all policy areas (COM(96)67final);
- The Employment Strategy adopted at the 1997 Luxembourg Summit (COM(98)131) which details equality of opportunity as one of its four central pillars;
- Structural Funds policies which include the promotion of equality of men and women in their objectives (COM(98)131)

Pre-existing EU Science Policy Commitments to Gender Equality

- Fifth Framework Programme (1998 – 2002)

The Communication's normative argument for engaging with the gender issue is short and is argued in terms of policy objectives in science – such as the pursuit of excellence, enhancement of life and serving society. It presents the gender issue in science as a democratic concern and states the involvement of women would enrich

European science in terms of the methods, subjects and objectives assigned to research. It argues failure to take advantage of this potential enrichment would harm Europe's interests and competitiveness. The Communication also argues that the EU is fundamentally committed to gender equality, emphasising the strong commitments made to gender equality in existing legislative documents.

Beyond references to the EU's existing commitments to gender equality, the Communication itself does not make any other explicit gender normative arguments. It defines the gender equality problem in science firstly as one of women's under-representation, arguing that women's progress in science is hindered by discrimination, leading many to leave research roles. This diagnosis of the gender equality problem thus presents it in terms of a structural issue and links it to existing policy aims. Subjective characteristics of women and men are barely mentioned, although an isolated reference to differences in perspective and gender inequality is presented as the outcome of wider practices and patterns in science.

The Communication explicitly states that it builds its description of the gender (in)equality issue in science on commitments in the 5th Framework Programme to 'encourage the participation of women in the field of research and technological development' (Commission of the European 1998.) It argues however that the meaning of these commitments must be elaborated, and defines the women and science agenda in terms of three themes: 'science ***by***, ***for*** and ***on*** women' (original emphasis) See Figure 4.5. Thus, the Communication asserts that research funded by the EU should meet the needs of female, as well as male, citizens; should include

'knowledge of what it is to be a woman, and of gender and gender relationships and of the impact of these concepts on a (sic) European Society'[66].

[66] Commission Communication Women and Science Mobilising Women to Enrich European Research, Commission of the European Communities (1999).

Figure 4-9 Excerpts: 1999 Communication 'Women and Science Mobilising Women to Enrich European Research'

Defining the Problem:

[Women] remain particularly under-represented in scientific research and technological development [Para 1 pg 1].

This situation must be rectified in the interests of equal opportunities for men and women; this is essential to democracy and a *political priority for the Union*. A greater involvement of women in research would *enrich European science*, in terms of its methods, the subjects on which it focuses and the objectives assigned to scientific research. *Failure to take advantage of this potential enrichment would harm Europe's interests* [Para 2 p1].

The under-representation of women in research is the result of a large number of very varied factors [Para 4 pg 1].

These obstacles are encountered through women's careers: some are specific to a scientific career while others arise from the more general situation of women on the job market. [Para 3 p 7]

Those who remain in a scientific career find themselves discriminated against, being employed on a less secure footing and receiving lower grants than their male colleagues. very few of them get the top jobs even in disciplines where the majority of graduates are women [Para 4 p 7]

Finally, the Communication emphasises the lack of knowledge and data on women's participation and the impact of science upon them. The communication argues this lack of evidence and data on the participation of women in science in the EU hampers action and engagement. Ameliorating this lacuna is therefore

articulated as one of the most important aspects of the new actions on gender (in)equality. To this end, the collection of new data on the participation of women, member state gender equality in science policies and research on gender issues, forms a large part of the proposed actions outlined in the Communication. With these resources, the Gender Unit produced a sizeable body of 'expert' publications on the gender inequality in science and ameliorative policy options over the next twelve years[67].

Synthesising a Knowledge Base

Analysing the content of this body of expert knowledge on gender (in)equality in science, consistent characteristics can be observed. Similar representations of the gender equality issue in science, using similar, highly formalised quantitative techniques such as regression, thus conforming to stereotypically (natural) 'scientific' techniques, are frequently replicated. Arguments are premised on an

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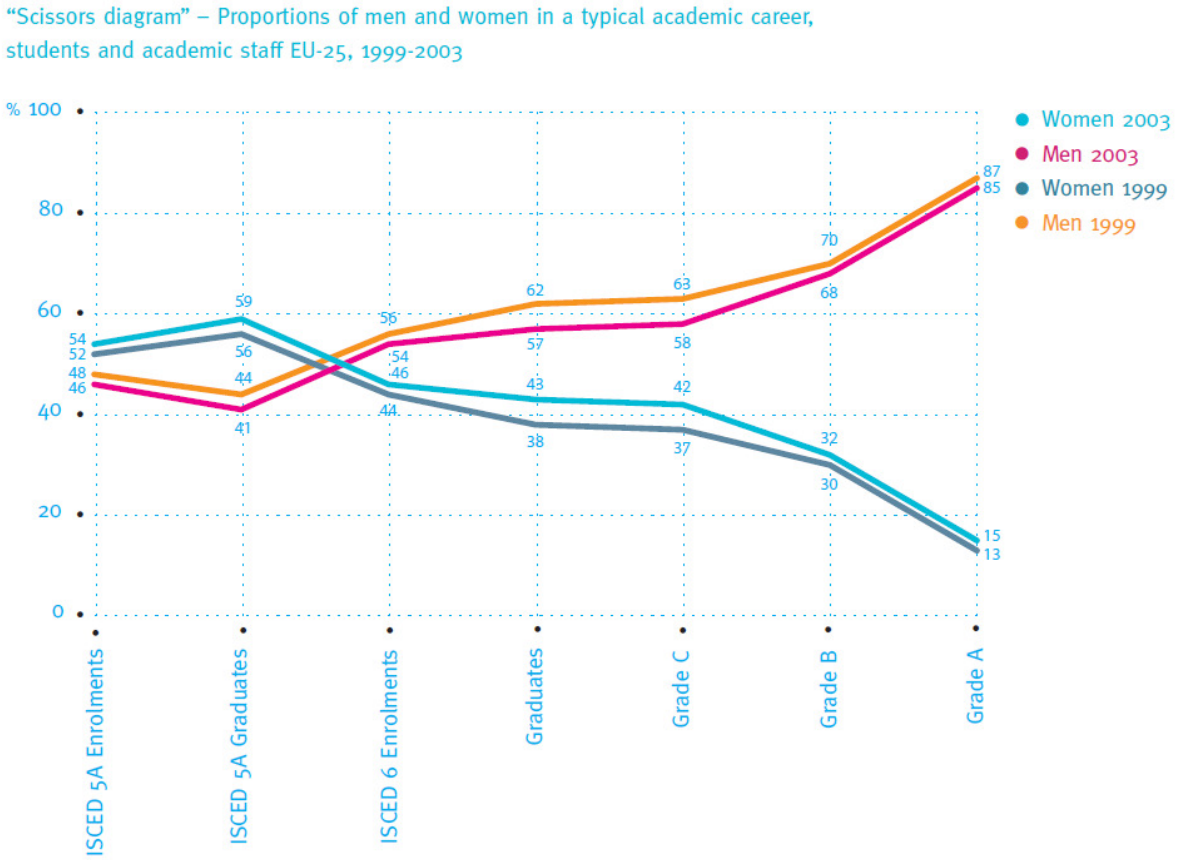
[67] ETAN Report on women and science: science policies in the European Union: promoting excellence through mainstreaming gender equality (2000), The Helsinki Group Report on national policies on women and science in Europe (2001), Women in public research and higher education in Europe (2002), The she figures (2003) Women in industrial research: analysis of statistical data and good practice of companies (2003) Women in industrial research: a wake up call for European industry (2003), Waste of talents: turning private struggles into public ones: Enwise Group (2004), Women and science: excellence and innovation – gender equality in science (2005), The she figures (2006), Gender and excellence in the making (2006), The she figures (2008), Mapping the maze: getting more women into top research (2008), Bench marking policy measures for gender equality in science (2009), The gender challenge in research funding: assessing national scenes (2009), Women in science and technology: creating sustainable careers (2009), The she figures (2009).

[67]Commission Communication (1999) Com (1999) 76-C5-0103/1999/2106(C) Women and science mobilising women to enrich European research, Commission staff working paper (2001) Women and science: the gender dimension as a leverage for reforming science, Vademecum (2003) Gender Mainstreaming in the 6th Framework Programme - reference guide for Scientific Officers/Project Officers, Appendix 8 Guide for Negotiations, Commission Communication 4.6.2003 COM(2003) 226 final/2 (2003) Investing in research: an action plan for Europe.

initial enquiry as to *whether* a problem exists and all contain or refer to very large quantities of evidence, which were created using dedicated resources following the 1999 Communication and the subsequent allocation of resources to research the issue.

Using this EU wide data, these publications provide a detailed description of the 'women in science problem', elaborating the issue as one of vertical, occupational segregation — coining the term 'the leaky pipeline' (ETAN 2000, Commission of the European Communities 2001, European Commission 2002, 2003a, 2003c, 2004, 2006, 2008, 2009) and the 'scissors diagram' (reproduced below Figure 1.1) to represent this pattern of vertical segregation (ETAN 2000, European Commission 2002, 2005, 2006, 2008, 2009). 'The leaky pipeline' describes the pattern whereby although women enter university training in the sciences in ample numbers, the proportion of men increases with each step up the professional hierarchy. This issue is consistently represented using large quantities of EU wide data, variously analysed to illustrate a dynamic of vertical segregation. The ETAN Report (2000) for example shows 13 separate graphs illustrating the balance between the sexes at various levels of professional hierarchy. Six further graphs illustrate with various nuances how the percentage of women's participation in science drops with each step up the hierarchy.

Figure 4-10 'The Scissors Diagram'. Representing horizontal occupational segregation in science.[68]



[68] First devised in the ETAN report (2000). Graphic reproduced from Mapping the maze: getting more women to the top in research, European Commission, (2008), p17.

Normative arguments form a minimal proportion of the new expert knowledge when compared with the volume of data. The normative significance of gender equality itself is usually stated no more than once or twice in legislative documents or expert publications sometimes over 100 pages long. The qualitative statements which are made, focus on the 'waste of talent', arguing that *Europe's competitiveness* will suffer if female scientists, in whom Europe has invested an education, are under-deployed (European Commission 1999:4, 2001:5, 2002:1, 2003a, 2003b, European Parliament and the European Council 2002).

In addition to enacting this 'scientific' presentation of the gender issue, the expert knowledge also explicitly argues that a scientific approach is necessary. The ETAN 2000 report for instance appeals for policy makers to approach the issue 'scientifically' (ETAN 2000:5) whilst DG Research's internal Working Paper (2001) argues the gender issue 'instead of being treated as an objective issue, provokes emotional reactions [too often]' (2001:3). The paper also repeats the need for a scientific approach to gender equality in science and describes five statistical dimensions, to capture the issue 'scientifically': numbers of women; vertical segregation; horizontal segregation; pay gap; fairness and success rates.

Each of the expert reports interrogates the findings which emerge from an analysis of scientific career trajectories, seeking to identify patterns within them and the practices leading to them. In this regard it applies a causal logic to consideration of gender inequality. The ETAN report for example, explicitly states that the scientific approach has uncovered bias in industry practices, using extensive amounts of data

to argue that the leaky pipeline phenomena is '*not a natural outcome*', presenting evidence of gender bias resulting in multiple discrimination against women (ETAN 2000:1). These biases included concepts of excellence which penalise scientists, not on the basis of their scientific shortcomings but in response to typically female attributes or reproductive career breaks *and* a tendency to ascribe such typically 'feminine' attributes to women automatically; recruitment through existing, and thus male dominated, networks; and sexism in the peer review and fellowship or grant allocation systems (ETAN 2000, European Commission 2000, 2002, 2003b, 2004, 2008, 2009, MIT 1999).

Co-ordinating Action Around the Gender Equality Agenda

Devising Actions

Using this evidence, and the existing knowledge gathered and identified in the two working groups, the Gender Unit identified and pin-pointed actions which DG Research could take to mainstream gender equality actions into daily practice. These were detailed not only in the 1999 Communication, but also further developed in a 2001 Working Paper circulated within DG Research.

The internal working paper applies the insights and concepts from this body of expert knowledge to DG Research's own practice and policy. It presents 29 tables of evidence, comparing women's participation in DG Research's panels and staff, some of which show female participation rates as low as 4% or 0%, along with ameliorative actions. Recommended actions, backed by these data and reproduced in multiple legislative documents include: the establishment of 40% female quotas for all decision making committees; commitments to mainstreaming gender *into research* when devising the Framework; funding research specifically examining

women's experience; and responsibilities for all SPOs to collect data and implement 'Gender Action Plans' (GAPs) which supply a template to tackle gender issues in projects. The paper also commits to monitoring and developing these actions through a suite of gender impact studies and the establishment of a database of GAPs as a resource for best practice (see Figure 4-11)

Figure 4-11: GM Actions and Structures Detailed in the 1999 Communication and the 2001 Working Paper

Policy Implementation Actions/Structures:

- A 40% target for women's representation in committees, groups and panels. FP6 requires that a balanced gender composition be systematically achieved across all the bodies and actors involved in the whole lifecycle of the programme, from advisory groups through to project teams.

- "Engendering" work programmes. FP6 requires that gender aspects be systematically integrated at all stages of the policy and programme implementation process (from calls for proposals through to evaluations and contract negotiations), and wherever relevant as a cross- cutting dimension in research content itself.

- Gender Action Plans. Contractors of the new instruments of FP6 (Networks of Excellence and Integrated Projects) are required to prepare a Gender Action Plan (GAP) for the promotion of gender equality within their project and later report on it. The GAP should be built around the two following steps: 1) a diagnosis of the current situation regarding gender within the proposal (women's participation and gender aspects in research), and 2) practical proposed actions based on the above diagnosis.

- Information and training. A Vademecum on gender mainstreaming in FP6 (EC, 2003c) was drawn up in March 2003 for the staff involved in the implementation and management of FP6, namely project officers and evaluators. It includes the legal basis for the gender mainstreaming actions and provides further details of references to gender mainstreaming in the official documents of FP6.

- A database on gender participation in FP6. The database will contain all available sex- disaggregated statistics on proposals, evaluators, programme committees, advisory groups and monitoring panels.

- The Women and Science Working Group. The inter-service working group, established in 2000, has continued its work of supporting the implementation of the Gender Watch System.

- Gender Monitoring Studies. A series of studies were launched at the end of 2004 to monitor progress towards gender equality in FP6. They were aimed at examining the participation of women and the integration of the gender dimension in research content, with a view to evaluating the success of current gender mainstreaming strategies and making recommendations for future action.

- Establishment of 'the Helsinki Group' a group to link DG Research with Member States.[69]

Creating Structures: to mobilise commitments to GM

GM commitments were not only established through these paper commitments however. The Communication and the Working Paper also established several groups to act upon and oversee the GM agenda (See Figure 4.12). These associations institutionalise representation of, and action upon, gender inequality in science at the strategic policy level (i.e The Framework). This includes within member state representative structures, *and* within implementation processes including the creation of the Work Programme and the administration of projects.

At the member state level the Helsinki Group is comprised of scientists interested in gender issues, or experts on gender in science issues, who are nominated by the member state governments. This group holds a remit to oversee, monitor and steer gender equality policy in DG Research as well as to provide expertise on the member state situation concerning women and science, and to facilitate the

[69]Monitoring Progress Towards Gender Equality in the Sixth Framework Programme, Synthesis Report, areonautics and SPace, Nanotechnologies and nanosciences, knowledge-based multifunctional materials and new production processes and devices, Sustainable Energy Systems, Euratom and Sustainable Surface Transport (2008): 43.

acquisition of data on women and science in their state. These persons have played a central role in the collection of member state data concerning women's participation in science, data that were subsequently used in DG Research's expert knowledge on gender (in)equality in science.

The Communication also established the Women in Science Working Group (WIS). This working group is comprised of a member from each Directorate who is nominated by their Directorate[70] and charged with a mandate to drive the representation of gender in research in their Directorate. This member of personnel is empowered to assist SPOs with the completion of GAPS and to help their Directorate incorporate gender dimensions into research in the Work Programme and Framework. To support SPOs and WIS working group members in processing GAPS, the Gender Unit supplied materials to brief evaluators on how to assess the inclusion of gender issues in the projects they evaluated.[71]

The Communication also saw Gender incorporated into impact assessment procedures, so that the impact on men and women and on gender equality is included as a criterion for successful research. Several external evaluators gathered this data, producing interim and final reports documenting DG Research's progress with GM. The production of these documents feeds gender issues back into the processes of creating both the Framework and Work Programmes. The documents and structures that the Gender Unit created to mobilise gender equality interests, therefore straddle all phases of DG Research policy activity from strategy to implementation.

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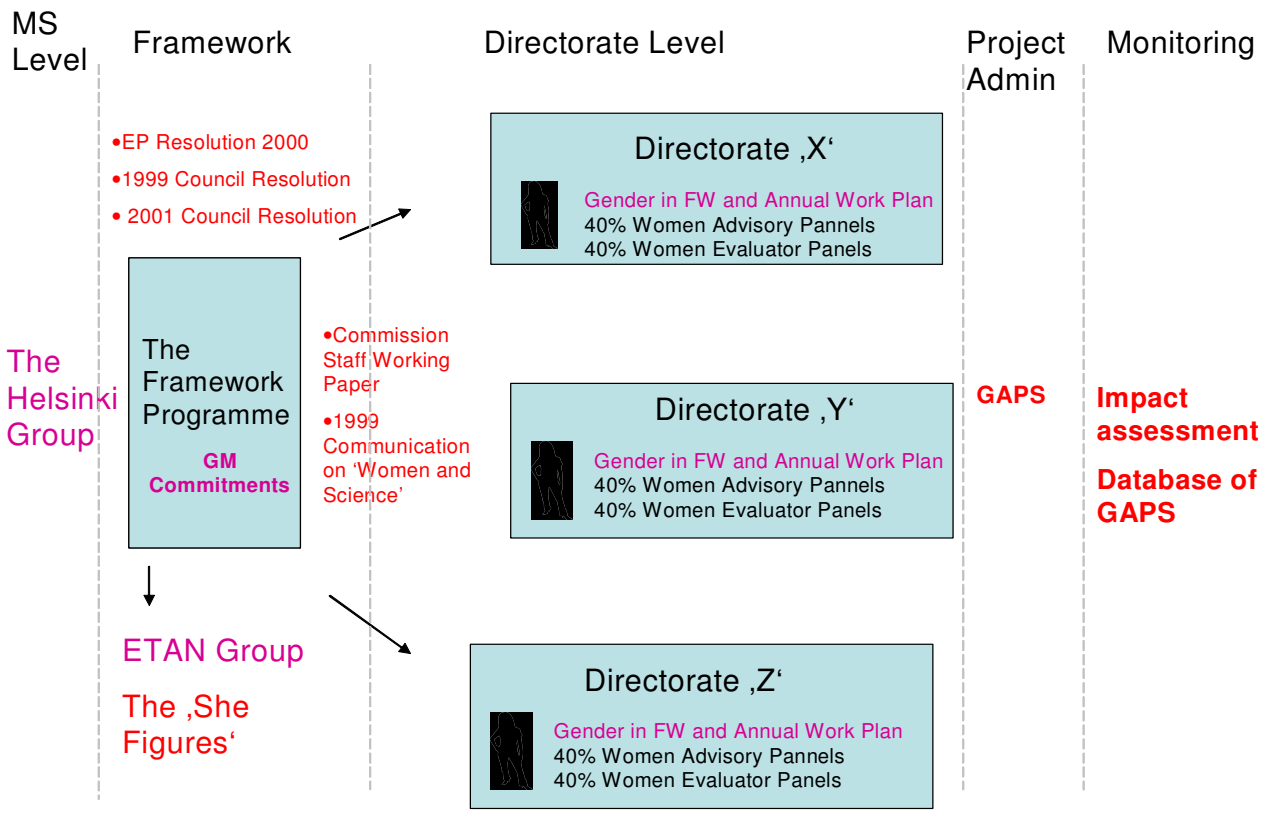
[70] Research Interviews DG Research Staff, Spring 2009.

[71] European Commission (2009) Monitoring Progress Towards Gender Equality in the Sixth Framework Programme, Synthesis Report: 17.

Figure 4-12 Documents and Persons Coordinating Action around the GM Agenda in DG Research



Discussion: Implementing GM in a Vacuum

These processes indicate the initial stages involved in movement within DG Research from an institutionalised non-awareness of gender inequality, to an engagement with it. This involved two enmeshed dynamics: the creation of new knowledge and the establishment of new structures both to continue its production and act upon the newly conceived gender equality policy issue.

The *MIT Report* and the *Nature* article supplied initial material which convinced empowered actors within DG Research to reassess the assumption that gender was irrelevant in science. Both articles state the gender issue *in* science - in scientific situations and arenas - in scientific rather than explicitly normative terms. Both were also produced by scientists in prestigious institutions, on the basis of scientific knowledge production practices such as peer review and statistical analysis, thus providing a new opportunity to contest the existing notion that no problem existed. This represented a two fold challenge to existing non-perceptions of gender inequality, comprised of an *assumption* of no problems and the non-evidence based way of thinking they were premised upon. In interviews, gender unit staff and 'experts' emphasised their frequent efforts to urge colleagues and policy makers to think 'more scientifically' and less 'emotionally' about the gender issue, identifying it as a key stage in raising awareness of the policy problem.

> 'They say that there's no problem because they're generalising. Its not very scientific … it always amazed me in the scientific community when you get these emotional reactions'[72]

> 'They say that the system works well – look at this woman at the top, but why are we never looking at longitudinally [I say]?'[73]

> 'You know you mention gender inequality and people are like what are you talking about … so you have to prove it scientifically.'[74]

> 'They say 'its not true, its unfair!' All logic flies out the window. It doesn't matter how many graphs you show.'[75]

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[72]Fieldwork Interview, Spring 2009, Gender Unit, Staff Member C..

[73] Fieldwork Interview, Spring 2009, Gender Unit, Staff Member B..

[74] Fieldwork Interview, Spring 2009, Expert A.

[75] Fieldwork Interview, Spring 2009, Gender Unit, Staff Member C.

Within DG Research however, no data or knowledge with which to do this, was available. Engaging with gender and mainstreaming gender therefore entailed first *investigating* gender inequality in EU science, and starting processes to develop and expand the knowledge base, which promoted a new way of engaging with and perceiving questions of gender.

To this end, the Gender Unit drew together existing communities to create the knowledge which would simultaneously represent the situation of women scientists, the effect of science and DG Research's policy upon women in the EU *and* which would articulate precise ameliorative action.

This required the mobilisation of considerable intellectual, human and textual resources in order to synthesise the necessary contextualised knowledge. GU staff and 'experts' all emphasised the achievement which collecting this formalised data represented and the EU wide collective processes involved in its creation:

> 'It's a major achievement to have published this data and it's not possible without the statistical correspondents.'[76]
>
> '[It] gave unequivocal statistical evidence, it really gave birth to what we call the scissor diagram, seminal things, it which gave such resounding evidence that this wasn't about a deficit model of some inadequacy on the part of women, it really clearly pointed to the structural issues.'[77]
>
> 'Just getting the data in 1999 was a huge achievement.'[78]
>
> 'It was like, now we have the data, so we have to do something you know.'[79]

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[76] Fieldwork Interview, Spring 2009, Gender Unit staff member H/

[77] Fieldwork Interview, Spring 2009, Gender Expert C.

[78] Fieldwork Interview, Spring 2009, Expert B.

[79] Fieldwork Interview, Spring 2009, Gender Unit, Staff Member B.

Gender experts from outside the EU and from other Directorates of the Commission in turn supplied expertise relating to their own work and fields, whilst DG Research staff's knowledge of the tools available in the policy processes were also essential. Without their first hand experience of the workings of DGR this final re-contextualisation of newly formulated perceptions of gender inequality in science, into *action* would not have been achievable. The efforts to institutionalise these ways of thinking subsequently took several forms. New 'scientific' approaches to the 'measurement' of gender inequality have subsequently been adopted to structure DG Research's own monitoring procedures, resulting in the 'churn' of apposite data back into policy making processes. GAPs on the other hand supply a framework for SPOs to act upon gender in their work, whilst associations such as the Helsinki Group and the WIS working group mobilise persons to oversee and promote them and to insert gender considerations into other stages of the policy process.

Conclusion

This review of DG Research has outlined its structures and the policy processes and practices through which a collectively held notion of the policy agenda has been established in DG Research. Reviewing 'mainstream' policy in DG Research, this analysis showed how abstract policy aims must be translated into action and subsequently coordinated, and the manner in which constraints upon this work of translation are exerted.

Examining the hierarchy of policy documents in DG Research, this analysis showed how the fundamental aims of DG Research have been established in DG Research's mission statement, which is itself anchored in the founding Treaties of the EC/EU. Routes to achieving these aims however are officially re-negotiated every four to seven years, in processes that drawn on the knowledge and interests of the scientific community in member states. The mediation between these actors is largely

undertaken by SPOs, who synthesise abstract aims with the opportunities and skills presently available in scientific research; doing so within the policy constraints set out in the sections 163(130f) of the SEA which establish DG Research's policy tools.

These policy processes therefore *contain* the policy negotiation process and remove particular aspects of the policy *problematique* from contestation and discussion. With the mission statement fundamentally established and stabilised *ex-ante*, subsequent negotiation of the Framework focuses on limited details of strategy. Competing interpretations of the purpose of science are excluded through these processes, or are given limited scope for expression.

This analysis therefore demonstrates the argumentative advantage which some particular perspectives enjoy within DG Research – an SPO's attempt to overturn DG Research's mission statement would confront the complex web of documents recursively stating DG Research's *raison d'etre* and its tools.

These processes of negotiation and mediation continue during implementation. Here SPOs administrate projects, acting to synthesise scientific researchers' activities and knowledge with existing policy tools and to instrumentalise them in pursuit of competitiveness. These implementation processes are very heavily structured, containing SPOs' interpretation and negotiation very tightly, ensuring their efforts contribute to the pre-established, wider, intended outcomes. Furthermore, these implementation processes include impact assessment procedures, through which the rolling *assessment* of projects' activities and impacts is fed back into DG Research's policy.

These processes therefore serve three administrative purposes. They stabilise policy aims, coordinate action and constrain the scope for re-interpretation. However, they also constrain how SPOs (and other actors), *know* the science agenda when they perform their daily work. To successfully participate with/in DG Research actors must work and communicate within these structures and practices. These processes thus constitute a large scale collective dynamic whereby the ways of knowing available to DG Research staff in their work are pre-constituted. These exclude or emphasise particular perceptions of the policy problem, and particular actions. DG Research's impact assessment procedures are unlikely for example, to include measurements of junior scientists' work satisfaction unless these are deemed relevant to EU competitiveness. This analysis clearly shows then, how local collective policy processes constrain action, the perception of policy problems and how competing visions of problems and action are excluded.

These policy processes constitute the environment into which efforts to mainstream gender entered. At the time of their introduction, the consideration of gender was essentially absent from DG Research policy and work at all policy stages. Although the interpretation of the competitiveness agenda in Framework 5 explicitly included social and human dimensions, specific commitments to gender equality were represented only by an isolated sentence in Framework 5. When we consider how activity is coordinated in DG Research and how abstract commitments to competitiveness are explicitly translated into prescriptions for action, *and* defined processes, it becomes clear how unlikely it is, that a one sentence commitment would generate activity in the pursuit of gender inequality.

The attempt to establish GM as a meaningful policy in DG Research spanned all stages of the policy process and required similar processes of synthesis. Much of

this knowledge however was drawn from outside DG Research and processing it into workable actions entailed significant resources and several stages. Gender unit actors drew on abstract, externally generated concepts of gender inequality, which identified it as a structural issue and provided methods to represent it as such. This knowledge presented new ways of considering gender inequality for DG Research and the scientific community. Premising their argument on an investigation of *whether* a problem exists, and using large scale data sets this body of expert knowledge challenged the pre-existing idea that assumptions of a meritocratic system could be premised on a lack of evidence.

Synthesising this with the knowledge of other EU Commission and DG Research staff, the Gender Unit elaborated the 'by, for and on' notion of gender equality policy and translated these notions into workable policy activities. These included 40% quotas for women on decision making committees, 'gendering' the Framework and the Work Programme, GAPs and finally monitoring actions which incorporated gendered impacts into DG Research's self-assessment feedback loop.

Documentary representations of commitments and actions were created which span all stages of the policy process. Here, references to the founding treaties of the EU, the Treaty of Amsterdam, the Commission Communication on Mainstreaming and the Luxembourg Employment Strategy, were used to represent existing EU normative commitments to gender equality, drawing on existing EU policy heritage in a manner similar to the references usually used to established DG Research's mission statement. Furthermore, associations of persons in the form of the Helsinki Group and the WIS Group were established to interact with these policy commitments, both at the strategic and implementation stages of policy.

At this stage then, two interim conclusions can be drawn. Firstly, a simple difference between the policy processes constituting GM, and those constituting 'mainstream policy' can be observed. The elaboration of 'mainstream' policy could be conceptualised as a 'bottom-up' process. These 'mainstream' policy negotiations could be argued to draw knowledge 'up' from actors in the scientific community. GM on the other hand necessitated a more 'top-down' or synthetic policy process, perhaps stimulating doubts that the policy is 'top-down' and thus contrived or illegitimate. As the previous analysis has argued however, DG Research's policy processes enhance the profile of one-of-many possible perspectives on the appropriate utility of science for the EU and its place and purpose in society, whilst excluding or minimising competing notions. Viewing this gender blind situation as 'natural' or to argue that gender has been 'inserted' into science in a contrived manner, would thus represent an over simplification: until Framework 5, recursive policy processes mobilised DG Research's scientific community around a notion of science which prioritises its application for the achievement of competitiveness.

The service of society and the maximum achievement of human development were only adopted as policy interests during Frameworks 5 and 6. The lack of knowledge amongst DG Research's policy community concerning social or occupational dimensions of science policy (such as gender inequality) is therefore at least partially a product of its pre-existing disinterest in them and its exclusion of such notions and the actors arguing them.

Secondly, this initial analysis of DG Research's policy structures and its newly established GM apparatus enables us to conceptualise the contestation of gender blindness and gender bias at an organisational level. The suite of documents and practices established in DG Research prior to Framework 5, *systematically* exclude

the consideration of gender inequality from the policy remit throughout all policy stages, including action. This constitutes institution-wide gender blindness which forms the protective barrier enabling the unchecked continuation of gender biased practices. These practices are themselves premised on an the assumption that no differential impacts exist and a subsequent lack of assessment/reflection.

In this regard, prior to Framework 6, DG Research's policy processes were mobilised to actively exclude gender inequality as a policy problem. Its policy activities supported and maintained gender blind and gender biased activities. Subsequent to the adoption of GM however, DG Research's resources have been used to gather data and create expert knowledge which constitutes an alternative and a challenge to gender blindness and gender bias in science, both in the 'scientific' research it funds and in the 'expert' knowledge which it produces on gender inequality in science. In addition, policy structures incorporating the consideration of gender inequality into day to day activities and self monitoring in DG Research have been created. In this regard the GM apparatus established in DG Research appears promising. The next two chapters examine how operational Directorates reacted to these policy measures.

5

Chapter Five Implementation Case Study: Directorate E

Chapter Four applied the analytical approach detailed earlier, which synthesises concepts and insights drawn from IPA (interpretive policy analysis) and STS/SK (science and technology studies/the sociology of knowledge). This approach aims to enable a more nuanced engagement with policy implementation processes and the manner in which GM (gender mainstreaming) might achieve change within policy implementing organisations. It entails several analytical assumptions. Firstly, it assumes the existence of several competing interpretations of policy problems and interrogates policy as the coordination of collective action around an agreed objective (Colebatch 2009). Secondly, it assumes that processes of interpretation and contestation are involved in every stage of policy development and implementation (Heclo 1974, Newman 2008), whilst arguing the importance of pre-existing practices and assumptions in shaping how policy issues are *known* and acted upon (Johnstone 2000, Wagenaar 2004, Wagenaar and Cook 2003, Levendai and Stubbs 2006, Laws and Rein, Yanow 2000).

Chapter Four thus provided a macro perspective of the policy processes and practices stabilising a shared notion of the science policy *problematique* in DG Research, showing how existing policy practices recursively established the instrumentalisation of science for European competitiveness, as DG Research's overriding aim. It also illustrated institutionalised gender blindness showing how the non-perception of gender inequality was replicated throughout DG Research's policy documents and activities prior to Framework 6. Finally, Chapter Four presented the policy structures, in terms of documents, processes and associations which the Gender Unit put in place under the guise of GM. My analysis argued that actions have combined to create and mobilise a body of knowledge, which

challenges the previously stable assumption that no gender equality problem existed in science, by elaborating a structural notion of gender inequality in science, an accompanying evidence base and ameliorative policy actions. Using documents, the Gender Unit inserted this perception of gender inequality into DG Research's hierarchy of policy documents, devising prescriptive actions and forming associations both to act upon this policy agenda and to represent the newly perceived gender inequality issue in wider DG Research processes.

Existing findings of GM scholarship however, have highlighted that written commitments to GM often fail to impact the implementation stage, either being watered down or simply 'evaporating'. To develop our understanding of how GM succeeds or fails it is therefore essential to examine if and how GM was implemented in operational Directorates of DG Research.

The following two case study chapters therefore apply this theoretical framework to present a detailed illustration of the 'movement' of GM into the implementation stages. In keeping with the IPA approach this analysis examines the policy processes through which GM has been driven in each Directorate and aspires to represent how implementing staff understand and perceive the relevance of gender or 'gender issues' in their work. Each case study therefore tackles three intersecting data themes: local interpretations of DG Research policy and the work which staff undertake in response to them, which form the 'context' for GM implementation; the mechanisms through which attempts have been made to coordinate action around new perceptions of gender inequality in each Directorate; and local gender knowledge in terms of SPO's understanding of the relevance of gender or gender inequality in their day to day practice.

Work and Structures in Directorate E: Food Quality and Safety

During Framework 6 Directorate E was comprised of six units, each dealing with a defined sub-area of the discipline:

- 'total food chain';
- 'epidemiology of food related diseases and allergies';
- 'impact of food on health';
- 'traceability processes along the production chain';
- 'methods of analysis detection and control';
- 'safer and environmentally friendly production methods and technologies and healthier food stuffs'; and
- 'impact of animal feed on human health'.

The majority of personnel in Directorate E are operational staff called Scientific or Project Officers (SPOs) who are responsible for the administration of research projects[80] funded through the Framework. Their actions are supported by the 'Horizontal Unit', which coordinates between other the Units within the Directorate.

Describing their work, all staff in Directorate E emphasise that their role encompasses the translation of strategic aims in DG Research policy into action, as well as the intensive procedural management and administration of projects, as detailed in the following extensive quote.

> 'The start of any project is that we define research priorities; they're published each year in a call for proposals. And after that we do the evaluation, we organise the evaluation of research proposals. When we have a list of proposals, we open negotiations with the most successful ones. So then I do the negotiations, and once the projects start, I do the project managing: checking that they are following the work we agreed on and evaluating every year, that they've done the work plan for that year so we can pay them.
>
> 'So basically what we check is that they are, you know, progressing towards their objectives and that the progress has been good enough,

[80] Undertaken by scientists in member states.

> so that everything is on time, they will finish on time and that the costs that they have incurred are related to the work done.
> So that starts again every year: every year there's a new call with new negotiations. Projects are running for between 3 and 5 years, normally. We manage all the things that come up during the lifetime of the project, if they need to change something. We have for the large projects annual reviews, where every year we take in external experts, to help us evaluate the progress. For smaller projects we have the mid term reviews with external experts, and, if there's the need to change, you know, the direction of the work after the review, due to the comments of the experts, we negotiate exchanges, if there's a new partner coming in and a partner leaving, all these things.
>
> ... that's let's say the project part and then we have lots of other activities more related to research policy, which are for example evaluation exercises of the programme evaluation. I'm involved in some evaluations of the 6th framework programme, and eh then, all kinds of different policy actions. Briefings for the Commission, for the Director General, presentations for our head of unit, for the Director, all these things where we want to spread information about what we do, or views that we have or the information needed for policy DGs. So the two different activities: the project and the policy.[81]
>
> 'We are in the whole project cycle. Policy writing, which means listening to the outside world on what is needed ... and then writing the work programme, writing the topics, discussing the topics ... giving advice to applicants, organising the evaluations, negotiating the projects, monitoring the projects.'[82]

Interviewees emphasised that this process of interpretation formed a key part of their work and an essential process in the implementation of the Framework, which is expressed in more strategic terms.

> 'It's up to every SPO actually drafting what is in his (sic) area or not.[83]
>
> '[It involves] deciding, what do we need? What kind of research should we fund to be most close to the full objectives of the

[81] Research interview, spring 2009, Directorate E, SPO 'b'.

[82] Research interview, spring 2009, Directorate E, SPO 'm'.

[83] Research interview, spring 2009, Directorate E, Horizontal Unit staff member 'n'.

> framework programme. And that of course involves stakeholder consultations and discussions about strategic research agendas.[84]

These strategic policy demands are described as fluid and changeable, emerging from three differing communities – DG Research, Directorate E's scientific community and EU policy Directorates such as DG Environment, Agriculture or Consumer Affairs, each of which prioritises differing qualities in research and different types of information.

> 'We consider new challenges that came up this year, so for example this year there is the economic crisis ... we know that food security aspects need addressed. There are these huge numbers of issues across all these areas that need to be considered, its a whole process of getting the information.'[85]

This is achieved through long processes of negotiation, where SPOs combine input from the Advisory Committee[86], the Programme Committee (PC), nine Technology Platforms and their own knowledge of the field garnered from their contact with research teams, under the oversight of the Horizontal Unit.' We receive advice from the AC, we receive advice and requests from the PC, we also have technology platforms in our areas, we have 9 that give us very important advice… then of course we talk to horizontal Directorates like DG budget, legal services, Secretary General … and of course we have scientific officers in each area.'[87]

> 'It's not easy but it is very interesting. It takes long discussions between us: every area is followed by three or four scientific officers, so we discuss a lot between us and then we make the proposal. And

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[84] Research interview, spring 2009, Directorate E, SPO 'b'

[85] Research interview, spring 2009, Directorate E, Horizontal Unit staff member 'e'.

[86] Also regularly referred to in Directorate E as the Advisory Group or AG.

[87] Research interview, spring 2009, Directorate E, Horizontal Unit staff member 'n'.

> then the proposal has to be approved by the Programme Committee which represents the member states etc, so it's not as though we propose [and] it's just taken.[88]
>
> 'You talk to the people and you learn a lot from the people and the projects themselves ... talking to the coordinators and participating mix[ing] with them you learn, as well a lot. So it's a mix of many things that at the end gives us like the focus.[89]

Responding to these developments and negotiating appropriately between the competing demands and interests of disciplines, DG Research policy priorities and other Directorates, each SPO drafts their section of the Work Programme for presentation to consultation partners in several stages.

Policy Drivers in Directorate E

Asked to comment on 'EU science policy' staff responded in terms heavily structured by their own work and the jargon established in EU policy documents. SPOs emphasised in interviews that DG Research policy focuses on competitiveness, innovation, the 'knowledge based economy' and integrated technology. This is often discussed in terms of EU added value and the ERA (European Research Area) arguing that the EU can contribute to a restructured and more efficient ERA.

> Interviewer: 'The first thing to ask ... is to try and get a broad overview of how you see things, can you tell me what you see as the policy priorities more generally?
> Interviewee: We are dealing with a number of very different lets say – of course it's all related to our framework programme but – different issues. One of our roles ... is to coordinate the preparation of the work programme, for each year. Then we are responsible for

[88] Research interview, spring 2009, Directorate E, Horizontal Unit staff member 'a'.

[89] Research interview, spring 2009, Directorate E, Horizontal Unit staff member 'a'.

> the international cooperation; we are responsible for coordinating interaction with industry, and particularly small and medium size enterprise; and we are responsible for our communication strategy; and then finally for internal procedures, the procedures that are the follow up of the call for proposals, and we are also coordinating how to run the call for proposals.[90]
>
> 'If you look at the treaty, European Union Treaty, it clearly says that the mandate of research policy of the EU is to increase competitiveness of the European industry.[91]
>
> 'I think our main idea is this knowledge based economy'.[92]
>
> '[We want] to bring a structured European research area (ERA) in the food safety area.'[93]

Efforts to reduce the duplication of research, such as the validation of techniques for adoption throughout the EU, form a primary component of this restructured and more efficient ERA.

> 'There have been a lot of efforts to harmonise and to de-fragmentise the research area in food safety because there's been quite a lot of unstructured research earlier where things, studies can be repeated in each member state, even by different research groups in each member state.'[94]
>
> '[The] European dimension can be that it's done by a lot of labs to validate that that method is working'[95]

In addition, SPOs also list the integration of 'horizontal issues' such as ethics, social issues, sustainability and environmental issues, small and medium sized enterprises

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[90] Research interview, spring 2009, Horizontal Unit staff member 'ne'.

[91] Research interview, spring 2009, Directorate E, SPO 'm'.

[92] Research interview, spring 2009, Directorate E, SPO *'a'*.

[93] Research interview, spring 2009, Directorate E, SPO 'b'.

[94] Research interview, spring 2009, Directorate E, SPO 'b'.

[95] Research interview, spring 2009, Directorate E, SPO 'b'.

(SMEs) and gender as important drivers in their work and the creation of the Work Programme.

> 'SMEs a lot ... 90% of our projects have industry...Then about socio-economic aspects, it's really relevant in this area, so you have to have a look at the socio-economic dimension and environmental aspects as well ... and for ethics ... so a topic was published and included in the call on ethical issues of nano-technology, and for instance synthetic biology. Now with the new tools ... you could really define one new organism. This can really have some ethical implications, so it's not already done as a separate topic; the topics that are published ... have an element on the ethical dimension.'[96]

As a result Directorate E sometimes funds projects which are not intended to immediately contribute to competitiveness.

> 'We are quite focussed on European competitiveness; on the other hand it's not our only aim, for instance we are doing some projects which are really to develop environmental technologies that, for the time being, industry is not very interested in.'[97]

On the whole, however, these competing policy priorities in Directorate E have led to a widespread practice of identifying horizontal issues *in* research topics and supporting the formation of multi-disciplinary project teams so that horizontal issues are researched simultaneously alongside technologies in multi-disciplinary teams. SPOs thus do not argue that an absolute division between 'technical', industrial or social research interests exists. This inclusion of interdisciplinary concerns is understood to produce better results from the outset.

> 'I'm dealing with really technical projects so having their main focus on [X], but you can't do [X] without looking at nutrition and

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[96] Research interview, spring 2009, Directorate E, SPO 'a'

[97] Research interview, spring 2009, Directorate E, SPO *'a'*.

> consumer acceptability and availability aspects and environmental aspects'[98].
>
> '90% of our projects have industry here... most of it is SMEs, so they are quite well targeted. Then about socio-economic aspects, its really relevant in this area, like the uses of biomass ... so you have to look at the socio-economic dimension and environmental aspects as well'.[99]
>
> 'Its not only toxicologists working looking at trace elements but we need to involve epidemiologists, physicians, nutritionists, consumer scientists, etc.'[100]
>
> 'These are really technical developments but they have a social implication at the end of the day.'[101]
>
> 'From our experience it is a lot more effective to ask every project to consider all or as well these aspects.'[102]

Interviews and documents in Directorate E show a consensus that this current agenda for food research has been heavily shaped by the numerous health scares (salmonella, mad cow disease) which occurred during the 1990s. These are understood to have highlighted inadequacies in EU food production, safety and regulation. On this basis, efforts to harmonise and validate food research/regulation combine easily with the strategic DG Research priorities concerning the establishment of an efficient and harmonised ERA[103].

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[98] Research interview, spring 2009, Directorate E, SPO 'm'.

[99] Research interview, spring 2009, Directorate E, SPO 'a'.

[100] Research interview, spring 2009, Directorate E, SPO 'a'.

[101] Research interview, spring 2009, Directorate E, SPO 'b'.

[102] Research interview, spring 2009, Directorate E, SPO 'a'.

[103] It is interesting to note that food scares are articulated as one of the key 'wake up calls' leading to the society led focus adopted in Framework 6, as noted in Chapter Four in references to the Explanatory Memorandum attached to Framework 6.

The adoption of a 'total food chain philosophy', 'Fork to Farm', has been an important conceptual response to these health scares. SPOs and Directorate E literature emphasise that this 'Fork to Farm' philosophy challenges traditional approaches to food research, which perceived an industry/research led food chain moving from production to consumers.[104] Directorate E's research programme, by contrast, consciously puts the human consumer at the centre of research on the food production chain; a conscious challenge to prior research practices[105]. One SPO described how this changed the focus of projects:

> 'Projects [in Framework 6] had much stronger focus on consumers and consumer perception, how consumers see risk and how we communicate risk, which then had a different focus.'[106]

Directorate E's research policy in Framework 6 therefore combined disciplines beyond those traditionally deployed and put humans at the centre of the agenda.

> 'Humans are at the centre, what do they want and how do they want it ... if they want GM food or if they don't want it: all these things where we look at the consumers and what it is that they want. We're trying to underpin with research the actions that can be taken.'[107]

Discussion: Directorate E's Drivers and Practices

SPOs' work therefore refers to strategic DG Research policy, such as the ERA and horizontal issues, wider EU Policy, and the disciplinary priorities of each Unit's area such as food processing or traceability. SPOs must interpret priorities (such as

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[104] Research interview, spring 2009, Directorate E, Horizontal Unit staff member 'e'

[105] Food Quality and Safety, Commission of the European Communities 2004:4

[106] Research interview, spring 2009, Directorate E, SPO 'b'.

[107] Research interview, spring 2009, Directorate E, SPO 'b'.

'epidemiology, 'traceability processes along the food chain' or 'sustainable production of biological resources') into specific research projects which respond best to the scientific agenda at the time, and which also contribute to competitiveness, the ERA, harmonisation of research in the EU, horizontal aims such as ethics and SMEs and the total food chain philosophy.

On a strategic level staff must balance broad aims of increasing EU competitiveness with both wider and sector specific strategic aims of de-fragmenting and harmonising scientific research on food in the EU. This notion of de-fragmentation and harmonisation refers not only to the reduction of research duplication between member states. It also entails interdisciplinary integration and the establishment of validated techniques. Directorate E staff must therefore keep abreast of competing research interests within different parts of the sector so that their interpretation of these aims is current and relevant.

The SPO perspective in Directorate E thus spans EU strategic priorities, the needs of the food sector and the EU's role in it, down to the day to day administration of research projects to provide a strategic added value. Moving between these two mind-sets, interpreting strategic priorities into workable actions is a key professional task of SPOs in Directorate E. This interpretation and negotiation is most evident in the negotiation of the Work Programme each year.

Directorate E's research agenda is thus characterised by the presence of multiple research aims and multiple stakeholders, with interests functioning on multiple levels. The policy environment in Directorate E is therefore inclusive and accustomed to synthesis, compromise and tolerating conflicting policy aims and actions. This generates a degree of internal inconsistency within the Directorate's actions. For example some projects fulfil only isolated policy aims which may even conflict with others (e.g. funding projects which do not directly contribute to competitiveness). It is also evident, however, in the allocation of funds within projects to interdisciplinary teams and the inclusion of horizontal research aims

within projects. Thus the shared notion of appropriate scientific activity in Directorate E does not rely on a strict separation of the 'technical' from 'the social'. Indeed some interviewees articulate a policy preference for research which includes social issues in 'technical' research projects as a route to better research. This has been particularly influenced by food safety scares and crises in the recent past.

This experience of interpreting and reconciling conflicting policy aims therefore demonstrates a pre-existing set of knowledge practices where conflicting imperatives are *not* 'bounded out'. Both the Horizontal Unit and SPOs in Directorate E articulate the reconciliation of competing research interests and responding to an ever changing, complex policy agenda as a key part of their role.

These professional practices, which emphasise the integration of complex, and at times even conflicting, policy aims, thus seem conducive to a professionally responsive attitude to GM. The next section details the processes through which GM implementation proceeded in Directorate E, and shows how the Horizontal Unit in Directorate E undertook work to understand and act on GM obligations and to populate them with meaning for SPOs.

Driving the GM Agenda in Directorate E

The Role of the Horizontal Unit

In common with all Directorates in DG Research, Directorate E was subject to DG Research GM policy of:

- Voluntary adherence to the 40% targets for female participation on the Advisory Group and Expert Groups which evaluate applications to undertake research;
- Enforcement and monitoring of GAPs in NoEs and IPs requiring researchers to consider gender aspects in research where relevant;
- Integration of gender issues into the work programme (creating research with gender *in* the topic);
- Participation in the WIS group; and
- Including gender in impact assessment.

Interviews explored how activity around these GM measures had been coordinated. Responses indicated that GM has been actively driven within Directorate E by the two members of staff in the Horizontal Unit[108] after their Head of Unit, who expresses interest in the gender equality agenda, assigned responsibility for the policy to them. These individuals described how implementation has been largely driven within the Directorate, even though GM policy emerged from the Gender Unit. They described the role of the Gender Unit as limited, comprising enforcement and facilitation of the WIS group through meetings approximately every 6 weeks. This support was restricted to 'technical' details relating to policy enforcement mechanisms and policy obligations.

[108] These staff also held other responsibilities.

> '[They told us] how it could be enforced and introduced in the work programmes.'[109]

> 'They convey information, "oh please don't forget the targets, or don't forget to mention gender in the work programme."'[110]

Through this contact the Gender Unit helped to raise awareness amongst WIS group staff of the GM policy obligations. It did not however supply input on how to understand the relevance of gender aspects in research. Nor did it stipulate how Directorates could go about achieving new obligations such as the 40% quota. The Horizontal Unit in Directorate E thus perceives itself as having largely devised its own approach to GM, a process which required learning and investigation to implement:

> laughs] 'so far it has mainly been our, lets say, our homework.'[111]

Elaborating on these actions staff described the local approach to GAPs[112] in IPs and NoEs, and the 40% voluntary target for female participation on its expert committees. Here Directorate E exceeds the 40% quota requirements, implementing a policy of 50% female scientific participation on Advisory and Expert Committees. To achieve this, the Horizontal Unit explored three measures. Firstly it specifically aimed to boost the number of female experts in their databases. Secondly, it sought to engage the Commission on the adoption of new working methods, such as video conferencing, which would not exclude women with caring responsibilities from participation on Expert Committees, which presently meet in Brussels for 2-4 day

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[109] Research interview, spring 2009, Directorate E, Horizontal Unit staff member *'n'*.

[110] Research interview, spring 2009, Directorate E, Horizontal Unit staff member *'e'*.

[111] Research interview, spring 2009, Directorate E, Horizontal Unit staff member *'ne'*.

[112] As mentioned in Chapter 4, GAPs, this means all research teams applying to these instruments must complete one and that evaluators must take it into account when assessing a project for award.

periods.[113] Thirdly, it has hosted conferences to discuss and discern the impact of changes within the field, such as globalisation, on women's participation. In this respect the Horizontal Unit devised a pro-active and widely interpreted approach to boosting the participation of women in research.

The Horizontal Unit has also actively participated in efforts to help projects and SPOs identify meaningful gender issues in research. This included the creation of documentary instructions contained in an annex of Directorate E's 'Guide for Proposers' distributed to research teams applying for Framework funds. This Annex presented a specific gender approach for Directorate E and its rationale, stating research in Directorate E 'must address women's and men's needs' and:

> 'should contribute if appropriate to an enhanced understanding of gender issues. Therefore the issue of whether sex and gender are relevant to a project's objectives and methodologies should be specifically addressed. This should apply to all projects.'[114]

The Annex specifically states that gender differences may be relevant in the impact on health of food products and in epidemiology. It further provides a set of questions to help the proposers assess whether their subject is gender relevant or not (reproduced below).

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[113] These suggestions were not taken up.

[114] Executive Summary Food and Quality Safety Monitoring Progress Towards Gender Equality in the Sixth Framework Programme, no date or author supplied : 9. [Draft document, not for public circulation, supplied by E during interview].

Extract:

'Annex 4 'Guide to Proposers' Specific Gender Approach for Priority 5'

"The possibility of gender/sex differences must be considered:

- In the formulation of research hypotheses.
- In the development of research protocols.
- In the choice of research methodologies and in the analysis of results.
- In biological, pre-clinical and epidemiological, behavioural research studies on both human and animal subjects.
- In the use of cells, tissues and other specimen, where appropriate.
- In the choice of a particular study population."

Directorate E also created the 'Food and Gender Network', a voluntary association for project coordinators (in IPs and NoEs) to support them in the development of the gender dimensions of their research and the completion of good quality GAPs.

An individual from each Unit in Directorate E also attended to boost their own awareness of gender dimensions in research in their field. Through this network Directorate E brought project coordinators together annually during Framework 6 to discuss and develop approaches to tackling gender issues within the research it funded. The group attracted good levels of participation and was very popular with participants, who found participation enhanced their research.

> 'many of them told us that this is where they had the interesting discussions when they made their proposals, because they were things they weren't used to reflecting on and they actually found it very interesting.'[115]

[115] Research interview, spring 2009, Directorate E, Horizontal Unit staff member 'ne'.

Directorate E also hosted two workshops exploring the intersection between science communication and gender.[116]

In addition the Horizontal Unit also worked to insert gender aspects into pre-devised research topics during the inter-service consultation. Thus, as a result of GM policy, the Horizontal Unit began to insert a request 'to deal with gender issues' into pre-existing topics such as food related disease. Horizontal Unit staff also described a practice of then stipulating *exactly* what 'dealing with gender issues' would entail in the explanation of a topic, which research projects receive.

> 'We state in the work programme that whenever a research topic is relevant, we look at it from a gender perspective they should do it, but we know that as scientists they may not read the introduction, and who we actually identify in topics where we say specifically gender is relevant.'[117]

By identifying the gender dimensions *in topics,* the Horizontal Unit also ensures that gender dimensions are taken into account by evaluators, who are asked to assess projects with regard to topic description supplied by DG Research. This involvement of the Horizontal Unit in the identification of gender aspects was deemed necessary, because of both a lack of knowledge concerning gender dimensions in research and initial resistance to the agenda. Horizontal Unit staff argue however that these measures have contributed to a culture change in the Directorate.

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[116] The topics of this workshop artfully navigated any essentialist traps. For example, materials explored how obesity related findings might need to be communicated differently to the public on account of the differences in men's and women's diets (more women are for example vegetarian) and socially conditioned perceptions of obesity. Communicating findings to men can prove more difficult because they are less likely to view themselves as overweight, when they are.

[117] Research interview, spring 2009, Directorate E, Horizontal Unit staff member 'ne'.

> 'Sometimes even the project leaders, coordinators cannot think of a dimension.'[118]

> 'Five or six years ago when you went to see a SPO and ask questions about gender, they really were annoyed, they had better things to do and now they are quite open.'[119]

Thus in Directorate E, the identification of the gender dimensions in research, and the development of approaches to women's participation in science followed a similar knowledge process to that within the Gender Unit at the outset of the devising of the GM policy. A new awareness of gender was synthesised through meeting and exchange, facilitated by EU resources and driven by committed actors – in this case located in Directorate E's Horizontal Unit. Directorate E thus translated the apparently prescriptive commitments detailed in the Framework, the Communication, and the Working paper, into workable actions within Directorate E's discipline specific work.

Interestingly, this dynamic of knowledge creation through collaboration and synthesis was further replicated *within* projects. Here, DG Research reported that many project teams responded to the GAP by hiring in a gender expert, to identify gendered dimensions of research. GAPs were not, however, the only mechanism through which the Horizontal Unit drove the gender dimension in research. It also actively worked on several other levels to incorporate gender into the Directorate's own research plans. At the most 'strategic' level of implementation, the Horizontal Unit assumed responsibility for inserting gendered research topics into the Work

[118] Research interview, spring 2009, Directorate E, Horizontal Unit staff member 'ne'.

[119] Research interview, spring 2009, Directorate E, Horizontal Unit staff member 'e'.

Programme. This could lead to the creation of a research topic, which is explicitly gendered.

> 'Now in the work programme ... we look at the role of women in rural areas. So we try to identify up front where it's relevant and then it's specifically addressed, in the work programme.'[120]

This means that a 'call' relating to the topic of women's role in rural food production will be put out, resulting in a minimum of one project relating to the theme.

Through these activities Horizontal Unit staff have actively taken responsibility for ascertaining and then defining the relevance of gender in Directorate E and mobilising it into the research agenda of the Directorate at the strategic and operational level. It did not delegate the devising or identification of 'gender issues' to the other actors in the policy process (Units, SPOs, technology platforms, the Programme Committee or the Advisory Group), rather it used documents and persons to mobilise it's own favoured synthesis.

SPOs Role in Driving GM

When questioned about gender in Directorate E's work, no SPOs mentioned *any* of the Gender Unit's documentation explaining GM, such as the Communication or the Working Paper or strategic GM policy, in any way. SPOs' awareness and understanding of GM stemmed from obligations with regard to GAPs impact assessment and the advice or instructions they receive from the Horizontal Unit about them.

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[120] Research interview, spring 2009, Directorate E, Horizontal Unit staff member 'ne'

> 'If we don't write anything on that [gender] we get a hint from people like [names Horizontal Unit staff] who tell us 'isn't there a gender relevant question.'[121]

SPOs also noted that gender could theoretically be inserted into the work programme by policy directorates with information needs, though this rarely happened because the Horizontal Unit usually identified gender dimensions first.

SPOs argue that the relevance of gender is well accepted in their Directorate's working practices and that Directorate E has shown commitment to gender issues in its work, although this was not however uniformly reflected by the attitude of researchers which SPOs deal with. Scientific teams' resistance to incorporating gender into their research usually turned on a rejection of the relevance of gender in their research. SPOs expressed no difficulty however in making projects take gender into account, provided that they did not delegate the identification of gender issues to projects. Leaving research teams to identify gender issues in their projects would fail, they argued, because researchers lack the knowledge/awareness to identify how it may be relevant:

> 'oh yes, sure there are people [researchers] who are not responsive to this question at all. But in the evaluation its's very simple: it means half a point less because they don't respond to the criteria that we have given. If we have clearly said gender issues have to be tackled and they don't do it, then it will be considered in the evaluation'[122].

> 'Yes they say its not relevant for their area, its not interesting, they don't see the point ... There's a lot of things like that.'[123]

> 'The European Commission like any funding agency is in a very comfortable position. We can always say "Do it" otherwise you will

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[121] Research interview, spring 2009, Directorate E, SPO 'm'.

[122] Research interview, spring 2009, Directorate E, SPO 'm'.

[123] Research interview, spring 2009, Directorate E, SPO 'b'.

> have problems in negotiation. So the process that we call negotiation is a bit one sided'[124]

Despite the presence of some resistance amongst some research teams, and diversity in the precise content of staff's gender knowledge, *all* staff were also keen to argue that how gender should be dealt and where it is relevant or irrelevant is uncontentious *within* Directorate E.

> 'No, no. There are other horizontal issues where there can be disagreements; the question is, do we do things differently for small and medium sized enterprises or not? Then you can discuss. But in terms of gender issues it's mostly very clear.'[125]
>
> 'I don't remember disagreement [within Directorate E].'[126]

Of the three SPOs interviewed, two articulated responsive but non-proactive engagement with the agenda. These staff cooperated with the Horizontal Unit when it identified gender issues, though they struggled to identify gender dimensions in research themselves. One SPO who expressed pre-existing commitment to ideals of gender equality, however, spoke of her own personal efforts to understand and develop the gender dimension in the projects she oversees. She used practices and findings from previous projects as a resource to develop her own understanding of the gender dimension in research and made attempts to mobilise and disseminate their insights.

> 'I took a lot of notes of the things that they put in their GAPs and I tried to help the new projects to be inspired by these ideas ... like [names project] they've got a report on how best to incorporate gender issues ... it describes the process they follow to work better

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[124] Research interview, spring 2009, Directorate E, SPO 'm'.

[125] Research interview, spring 2009, Directorate E, SPO 'm'.

[126] Research interview, spring 2009, Directorate E, SPO 'm'.

> with gender issues. I think these are the type of things I need because we get limited information.'[127]

Gender Knowledge in Directorate E

Having discussed the techniques which the Horizontal Unit and the Gender Unit applied to render GM policy tools effective and how SPOs continue the process with relation to projects, I now turn to consider *what* understandings of the relevance of gender to DGRs' work have penetrated the working practices in Directorate E. Here, data from interviews with both SPOs and Horizontal Unit staff is explored to investigate what conceptions are evident. Later in the thesis these will be contrasted with the gender knowledges articulated in the next case study, Directorate J. Findings show consistencies in the manner in which staff in Directorate E conceive the relevance of gender in their work.

When asked to discuss 'gender issues' all staff articulate understandings heavily structured by their daily working practices and its language. The key indicator of this is the manner in which *all* staff in Directorate E emphasised the 'two pronged' approach to gender equality, differentiating between the participation of women in science and the gender dimension in research.

This two prong differentiation is contained in the GAP, as '*the DG Research approach*', and was routinely articulated by all interviewees. The 'by, for and on' rhetoric developed by the Gender Unit in the Framework, the Communication and internal Working Paper were not mentioned by any interviewees at any level in Directorate E.

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[127] Research interview, spring 2009, Directorate E, SPO 'b'.

Women's Participation in Science

Even though the sectors with which Directorate E works have arguably the highest rates of female participation in research (53-56% of PhDs in the life sciences were female during 2002-2006[128]), 'women *in* science' is still perceived as a problem by the Horizontal Unit. Staff discuss the issue in terms of the dwindling proportion of female researchers with each step up the hierarchy, despite the fact that in numerical terms female researchers dominate the field.

> 'there is still a big challenge, problem, whatever we call it, about how women are very much present at academic studying ... and how this trend just goes down as they graduate.'[129]

The Horizontal Unit base this observation on statistics on women's participation which they draw from their own project work, evaluations of the impact of GM and communication with the Gender Unit though participation in the WIS group. The Horizontal Unit thus regards their field as male dominated based on a range of numerical evidence showing vertical occupational segregation.

This opinion is not uniform throughout the interviews however. Two SPOs identified the field as female dominated or problem free. Both these staff based their opinions on anecdote drawn from their studies or their early career, explicitly couching their views in personal experience and a non-engagement with DG

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[128] Commission of the European Communities Directorate General for Research, 2009. Stocktaking 10 years of Women in Science Policy by the European Commission 1999-2009:540.

[129] Research interview, spring 2009, Directorate E, Horizontal Unit staff member 'ne'.

Research's data on women's participation. In both cases this non-interest is related to the prioritisation of other professional interests and demands.

> 'I was really confronted with the gender issue because I was one of the 6 men within 120 (persons) in our first year'[130]
>
> 'I don't see major problems ... because for me it was not difficult'[131].
>
> 'I don't take the time to read documents on gender issues. I'm very honest in that way.'[132]
>
> 'I'm not that much greatly interested in gender issues myself. What I use is ... the reporting guidelines that I have to follow by coordinators that include gender issues, so I have to be aware of those.'[133]

For these two staff their knowledge of 'gender issues' as regards women's participation in science is limited to their own subjective perspective and a procedural knowledge of the Directorate E/DG Research monitoring requirements for women's participation. Neither express an awareness of, or interest in the results.

As discussed above, the Horizontal Unit also sought to identify barriers to women's participation, identifying organisational practices within the commission as a barrier and organising a conference on the impact of globalisation on women in life sciences. It is interesting to note that this view is premised on the normative assumption that scientists with caring responsibilities should also participate in

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[130] Research interview, spring 2009, Directorate E, SPO'm'.

[131] Research interview, spring 2009, Directorate E, SPO'a'.

[132] Research interview, spring 2009, Directorate E, SPO'm'.

[133] Research interview, spring 2009, Directorate E, SPO'a'.

research. Another SPO identified gendered concepts of excellence as a barrier to women's participation:

> If we measure excellence in some kind of old-fashioned way that the only excellence is that you spend all your time in the lab, then it's not OK. Also research shows that even when women are traditionally as excellent as men or more so, they are still not chosen.'[134]

These notions regarding the problematisation/non-problematisation of women's participation in science can be differentiated not only on the basis of their diagnosis of the situation, but also on the basis of their evidence base. Those problematising women's participation approach the situation from several angles. Their thinking spans the discipline, Directorate E or DG Research and also encompasses the hierarchy in the field as a whole and across time. These actors question how decisions and practices affect people. This can be contrasted with those arguing women's participation as a non-problem, who assess the issue in terms of their own personal experience, on a vastly smaller scale.

These differences not only reveal very different gender knowledge content, they also reveal competing ontologies and epistemology of gender. Although the staff driving GM who view occupational segregation as a problem do not, of course, expressly articulate this, their views show a conceptualisation based on the notion that gendered outcomes are structural and that social practices (in this case employment related practices) have an impact on groups and individuals within them. These actors thus perceive of gender as a structural issue. Their actions have attempted to draw colleagues into acting on this basis.

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[134] Research interview, spring 2009, Directorate E, SPO 'b'.

The Gender Dimension in Research

Research Populations

Interviews with staff in Directorate E show varied understandings of the gender dimension in research. Staff discuss how gender aims can be served by inserting gender into mainstream topics or by choosing research foci which could produce findings relevant to women, as well as, on one occasion, through capacity building and changing concepts of excellence.

Gender in research was often discussed in Directorate E in terms of its 'obviousness'. Staff found the inclusion of both sexes in research populations the easiest gender dimension to describe and the most 'obvious'.

> 'That's one way, to try to ensure the balanced representation in their study populations so that they have a good starting point in a study for example'[135]

> 'All of these more medical issues, all the diseases, obviously it's relevant to look at gender.'[136]

One SPO, who expressed reservations that GM and other horizontal issues had been ascribed too much importance, argued that researchers do and should already know to take sex differences into account.

> 'I think that it's a nonsense to say in a topic description on disease prevention for example, gender issues have to be taken into account. If you do a clinical study or an epidemiological study, you do it, if

[135] Research interview, spring 2009, Directorate E, SPO 'b'.

[136] Research interview, spring 2009, Directorate E, Horizontal Unit staff member 'e'.

> the Commission tells you or not. No scientist, no epidemiologist will do this study without looking at gender.'[137]

The same SPO went on however to argue at length that scientists deserve autonomy to decide whether it is legitimate to run tests with male only populations.

> 'If the scientist wants to do the test on young, healthy men – and I think this might be in terms of money because the scientist doesn't have enough money to pay a large enough group to have both sexes involved – then in order to have one component factor less in terms of statistics, OK I concentrate on one gender, I think that's an approach. Whether it is the right one or not should be up to the scientist to decide.'[138]

SPO's awareness of the typical sex-related differences which might be relevant within research populations encompassed both biological predispositions and social factors. SPOs cited differing susceptibilities to substances or dietary changes and choices as relevant factors along with gender differences in consumer testing.

> 'Hormone-like substances in our food and how they affect, its obvious that there are gender differences'[139]

> 'Lets say a topic on Africa with malnutrition ... research on diets and we know that male and female are affected differently'[140].

> 'Many more women are vegetarians and they are exposed to much more cadmium through the vegetarian diet'[141]

> 'Find[ing} out what do consumers think ... sensory tests. And for the sensory tests gender issues, gender differences are taken into account'[142].

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[137] Research interview, spring 2009, Directorate E, SPO 'm'.

[138] Research interview, spring 2009, Directorate E, SPO 'm'.

[139] Research interview, spring 2009, Directorate E, SPO 'b'.

[140] Research interview, spring 2009, Directorate E, Horizontal Unit staff member 'e'.

[141] Research interview, spring 2009, Directorate E, Horizontal Unit staff member 'n'.

Thus, pre-existing disciplinary knowledge of established sex-related differences in diet preferences and the affect of toxins on male and female bodies, provide some practice in recognising and including sex or gender in research projects.

The notion that test populations should include both sexes is not a stable, established pre-given in the field, however. Staff described how Directorate E's tendency to insist upon gender balanced test populations represents a challenge to existing assumptions in the wider scientific community. Horizontal Unit staff and some SPOs also argued that frequently research teams did not know how sex could count and one SPO described how she had to persuade research teams that they should not assume men and women are the same unless they proved it.

> 'We should never make the assumption that women and men are the same unless we show it when we look at their food habits or their exposures and so on.'[143]
>
> You and I we come from a younger generation where maybe it's been evident since we started our studies, but an older generation, they don't see it that way.'[144]
>
> 'No, it's not [easy] at all, it's quite difficult actually to get people to understand even these basic things, that women and men may actually be different.'[145]

Another worried that GM implementation, in common with other horizontal issues, may 'divert' attention and resources from other 'science'.

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[142] Research interview, spring 2009, Directorate E, SPO 'm'.

[143] Research interview, spring 2009, Directorate E, SPO 'b'.

[144] Research interview, spring 2009, Directorate E, Horizontal Unit staff member 'ne'

[145] Research interview, spring 2009, Directorate E, SPO 'b'.

> 'Scientists have less time to deal with the central question itself, they have to go into all these general parts'[146].

This notion that gender and science sit in opposition to each other is an interesting finding in view that Directorate E and life-science in general has developed a person centred interdisciplinary attitude.

In addition to including gender in research projects through GAPs, Horizontal Unit staff and SPOs also articulated the relevance of gender in terms of impact assessment, seeing gender impact assessment as part of wider DGR efforts to produce research which responds to socio-economic needs. Here, SPOs describe an awareness of the wider social impacts of their research, often referring to disciplinary givens or policy aims established elsewhere, which Directorate E is accustomed to responding to.

In the field of development for example this may relate to known gendered roles in food production and externally established imperatives such as the Millennium Development goals, which already contain explicit reference to gender.

> 'There were some technologies – for this is on sharing food technologies research by means of international collaboration ... Improving the process, improving the product – making it safer for example - and then bringing back the knowledge to Africa ... And this is related especially for women because women are doing this work.'[147]

Gender's Irrelevance

SPOs and Horizontal Unit staff described some areas of research in Directorate E where gender was perceived to be wholly irrelevant. This usually related to topics

[146] Research interview, spring 2009, Directorate E, SPO 'm'.

[147] Research interview, spring 2009, Directorate E, SPO 'm'.

where the research's focus was the development of a technology or a process. One argument for this approach was that in some instances gendered dimensions of impact were already known and established in the field. Re-researching gendered impacts was therefore deemed unnecessary. On other occasions social or gender issues competed with other aims prioritised within the project.

> 'On cell cultures then you can't really address the gender aspect.'[148]

> 'They know how people – women, men, old people, children – react to that [substance]. But this [project] is pure technology to reduce the amount of these substances. They're not tested on human beings, so gender issues are nil.'[149]

> 'The European dimension can be that it's done by a lot of labs to validate that that method is working ... UK, Sweden and Greece you will get the same result .. from the same types of samples, and that's already a really great achievement. So there are definitely projects like that and there are definitely the other type of projects like you say that it's trying to look more at the societal aspects.'[150]

> 'I don't want to focus so much on gender because I want to spend the money on something else.' [151]

Staff who were explicitly supportive of the inclusion of gender issues in research however commented on the gendered implications of decisions to focus on technical projects.

> 'From the technical perspective yes, I agree there could definitely be examples of projects where you really can't find the gender

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[148] Research interview, spring 2009, Directorate E, Horizontal Unit, staff member 'ne'.

[149] Research interview, spring 2009, Directorate E, SPO 'm'.

[150] Research interview, spring 2009, Directorate E, SPO 'ba'.

[151] Research interview, spring 2009, Directorate E, SPO 'm'.

> dimension, but then maybe you have to look further again. Because maybe you chose to look at one thing, rather than something else.'[152]

Gendered implications of food processing technologies for use in Africa, for example (see previous quotes), was provided as an example of this phenomenon. On the basis of this viewpoint, Horizontal Unit staff referred to efforts to include women in research decision making, on expert committees and on the Advisory Board, to ensure that research resources were used appropriately to produce proportionate benefits for women.

> 'Of course that is why we are keen to have [women] also in the Advisory Group to make sure women are also participating in the decision process.'[153]

Implementing GM in Directorate E: stabilisation and reinterpretation

Findings in Directorate E provide a micro-perspective on the policy context into which efforts to mainstream GM commitments enter. They show that staff in Directorate E, do not talk in abstract terms when describing the aims of EU science and that the descriptions they articulate are remarkably uniform. Interviewees spoke of competitiveness, horizontal aims such as ethics and social dimensions, and food related specific scientific agendas. Describing these agendas staff referred to the Treaties, terms such as the ERA, and work processes such as writing the Work Programme and administering projects.

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[152] Research interview, spring 2009, Directorate E, SPO 'ba'.

[153] Research interview, spring 2009, Directorate E, Horizontal Unit, staff member 'ne'.

Staff describe negotiating and synthesising between the competing research aims which these policy agendas articulate, as a key part of their work in Directorate E. Scientific research, as conceived by Directorate E staff, thus does not restrict itself to a purely technical mandate; social issues are not bounded out. Indeed, food related crises and health scares in the 1990s have resulted in explicit commitments to public accountability, socially contextualised research and a willingness to impose these imperatives on the scientific community. The commitment to competitiveness in Directorate E has not therefore been interpreted in short-term or purely commercial terms. Balancing this policy agenda in Directorate E however requires professional skills and disciplinary knowledge, both to synthesise potentially discordant aims and to balance policy interests, even if they may explicitly compete. These knowledge practices constitute the environment into which GM has been absorbed within Directorate E.

GM has thus yielded a similar response to that enjoyed by other policy aims within this Directorate. It has been re-interpreted and articulated with existing practices and aims, in the same way other policy aims have been. This does not mean that the implementation of GM has progressed 'by itself'. Although the Gender Unit prescribed closely how GM could slot into processes of negotiation, evaluation, the Work Programme and the Framework Programme, these still needed translated into action within Directorate E. The results thus show how dynamics of mobilisation and stabilisation discussed in preceding chapters, interplay on a more micro level in processes of policy implementation.

The 'direct' impact of the Gender Unit, for example in terms of its materials and its contact through the WIS, has been limited in Directorate E. SPOs indicate no first hand awareness of any of the Gender Unit's publications, or the prescription for

science 'by, for and on' women which it has sought to articulate. Descriptions from the staff in the Horizontal Unit on the other hand indicated that whilst in many ways the Gender Unit's policy prescriptions *are* tightly defined and procedurally clear, actually implementing them still required a further stage of interpretation and action to ensure they were acted upon.

Within Directorate E this process of interpretation was undertaken by the Horizontal Unit, who describe a process of 'homework' where personnel were deployed to devise policy actions to actually define *how*, for example, gender quotas could be achieved. Responding to the imperative to take gender into account also required similar 'homework'. Interviews also show how knowledge on 'gender aspects' in research remains low within the research community, even though wider disciplinary knowledge includes awareness of socially constructed differences in diet and of biological differences. To understand the gender dimension in research, Directorate E instigated a similar knowledge creation process to that described by the Gender Unit in Chapter Four, creating the Gender and Food network

These processes yielded structural understandings of gender inequality which included nuanced assessments of the status quo and causal assessments of the factors which might have lead to them. Thus, despite the very high representation of women in the sectors in which Directorate E works, inspection of women's representation across the scientific hierarchy prompted concern within Directorate E and commitment to ameliorative action. Outputs from the food and gender network on the other hand provided information on relevant gendered differences in impact.

Prior to the implementation of GM in Framework 6, this gender knowledge, which perceives inequality, understands its origins as structural, and can identify ameliorative action, was absent. Horizontal Unit staff describe how SPOs, who 'had better things to do', were 'annoyed' by requests to deal with gender in their projects. SPOs on the other hand describe how reception within the scientific community remains mixed.

However, on the basis of these knowledge creation processes, the Horizontal Unit took responsibility for devising measures to achieve the implementation of 40% quotas and identified and specified how gender could be mainstreamed into projects, contacting SPOs and devising research topics with gender aspects within them. In addition, the Horizontal Unit devised tools to try to encourage and enable project teams and SPOs to tackle the gender agenda independently, devising questions for research teams and SPOs which guided them through the creation of GAPs and annex materials, ensuring that evaluators understood how to assess gender aspects when deciding whether or not to fund a project.

These processes underscore the interplay between documents and persons in policy processes and the tension between the stabilisation of issues and the continued requirement throughout policy process to re-interpret policy into workable action. DG Research's GM policy describes the three dimensions of the gender issue. This effectively 'book ends' an interpretation of GM which contains considerable scope for action and provides clear stipulations on what GM should entail, including quotas for expert committees and gender dimensions in research. These aspects of the GM policy are thus pre-stabilised for actors in Directorate E: GAPs and 40% quotas would not have existed or been implemented without the efforts of the Gender Unit to insert them into the Framework and implementation procedures.

However, even when 'officially' stabilised in the Framework or other strategic documents such as the Working Paper, GM commitments cannot be expected to proceed into action unless populated with locally relevant meaning. These processes of reinterpretation and translation require the mobilisation of persons holding the apposite knowledge.

Coordinating Action around the GM Agenda

In addition to devising measures and defining them then, the Horizontal Unit also communicates directly with SPOs and Evaluators to ensure that they undertake GAPs and include gender in impact assessment. These actions ensure that SPOs *do* act on these obligations – as they described in interviews. In turn these activities, which consequently form part of daily practice, structure SPOs' perceptions of gender issues at work. Directorate E SPOs know and describe policy issues through the processes and jargon which are collectively used to coordinate action in DG Research. Within 'mainstream' policy these meanings are comprised of the processes of project administration, strategic aims such as the ERA, competitiveness and local disciplinary imperatives such as the establishment of validated techniques. Similarly staff in Directorate E commented on gender issues in terms overwhelmingly structured by their own work. All staff, when asked to reflect on gender issues, first explained how they have acted upon them and described an institutional consensus around the inclusion of gender. SPOs and Horizontal Unit staff thus consider the relevance of gender to their work using jargonistic approaches similar to their wider conception of EU science and technology policy.

For example, all SPOs and Horizontal Unit Staff spoke about the 'two prongs' of GM, women in science, the gender dimension of research and of gender in impact, rather than the Gender Unit's threefold articulation. In many ways this is

unsurprising, as the GAP forms the main structuring experience of gender equality in science for SPOs and is supported and supplemented by their awareness of the 'gender dimensions' which the Horizontal Unit insert into project descriptions and the work programme. Action in Directorate E *is* thus coordinated around structural conceptions of gender inequality to a degree – some aspects of SPOs work is premised and acts upon a structural notion of gender inequality.

This does not mean however that the implementation of GM has resulted in 'conversions' so that all staff now describe the social construction of gender, perceive several axes of gender inequality, or articulate a structural understanding of gender inequality. In fact, when pressed, some SPOs expressed uncertainty or disinterest in gender issues and struggled to articulate a rationale behind DG Research's GM activities, without referring to personal anecdotal experience. None, however, expressed generalised misgivings about, or opposition to GM, and it should be emphasised that these personal or normative reflections on gender issues more broadly had to be explicitly solicited through questioning.

Conceptualizing Gender Mainstreaming and Gendered Change in Directorate E

These data enable us to develop our understanding of gendered change within Directorate E and provide some interim conclusions on the utility of analysing GM as a knowledge process. Findings show how helpful the collective conception of knowledge, articulated in this approach, is to understand and observe shifts in the dominance of gender blindness and gender bias in (supra) state organisations.

The data presented here show that, since the implementation of GM during Framework 6, the structural understanding of gender inequality, articulated by the Gender Unit, is indeed in evidence in Directorate E. Directorate E is not wholly institutionally gender blind. The changes which this entails can be observed impacting SPOs' activities, Directorate E's external impact on knowledge production, and the new actors it draws into its policy community.

Subsequent to the adoption of GM, all staff now differentiate gender equality issues into 'women in science' and 'the gender dimension of research. They distinguish between science about women (mixed sex sample populations) and for women (impact) and by women (quotas). These concepts thus hold meaning within Directorate E, a result largely due to the explicit elaboration supplied by the Horizontal Unit *and* its continuing efforts to restate and reinforce them. As a result, some aspects of Directorate E's work act upon this perception of gender inequality and its relevance in science.

GM has also, however, resulted in the active solicitation and encouragement of perspectives which perceive gender differences and gender inequality – Directorate E has actively drawn this knowledge, and the actors representing it, into its policy community. Through its implementation of GAPs and the Food and Gender network, it is also encouraging and fostering the development of more and more knowledge premised upon these perspectives. These results show how a policy implementing institution can mobilise people to act on its preferred interpretation of a policy issue.

This change is not, however, wholesale. Other 'mainstream' policy partners surely continue to articulate and act upon a gender blind conception of science policy, and SPOs who are relatively disinterested in gender equality have not been 'converted'. For pro-gender equality individuals in Directorate E, however, the resources and structures created by DG Research's mainstreaming commitments provided opportunities which can be broken down into three dynamics:

- the chance to act upon gender inequality in institutionally acceptable ways without penalty or the requirement to persuade;
- access to organisational resources to support and recruit further actors sharing similar perspectives;
- access to resources to develop further knowledge on the gender issue, amplifying and legitimising the notion that gender is relevant and that gender inequality exists.

The Gender Unit's successful efforts to create new institutionalised 'pockets' to act on gender inequality within the policy process have therefore had several implications. Most importantly it has created moments within the policy process where other actors *wishing* to undertake GM are supplied with some institutional resources to do so. These include ready defined opportunities in the policy process such as GAPs; monetary resources to create knowledge; and the implementation of quotas. These policy commitments also result in a continual expansion of the body of knowledge on gendered impacts of research and policy and its incorporation into impact assessment procedures and the monitoring of women's participation. Within Directorate E the Horizontal Unit have pro-actively seized these opportunities, exploiting them fully and elaborating a wide and nuanced interpretation of the relevance of gender in science and of GM.

Findings in this chapter therefore provide a micro analysis of the processes through which an organisation can amplify or restrict the expression of commitments to gender equality and promote or exclude particular conceptions of the policy problem at hand. Prior to GM, an actor attempting to contribute to gender equality through research would have had to do so covertly, or to have expended significant personal resources and skill in *persuading* other actors at multiple levels of hierarchy and multiple policy processes, that a gender dimension or a female expert should be included in research, on an individual case-by-case-basis.

GM's implementation has therefore significantly altered the terrain for actors in Directorates willing to act upon pro-gender equality sentiments, because the normative contest establishing the legitimacy of gender's inclusion has to a significant, though not wholly conclusive, extent been won elsewhere. Although this does not mean that pre-existing gender bias and gender blindness, or the structures which previously held it in place, have been wholly eradicated, it can significantly reduce the marginalisation of perceptions of gender inequality within policy activity.

The next chapter explores implementation in Directorate J, nuclear energy, providing a comparison with Directorate E's comparatively positive outcomes.

6

Chapter Six Implementation Case Study: Directorate J

Work and Structures in Directorate J

During Framework, 6 Directorate J was comprised of four units, each dealing with a defined sub-area of research on nuclear energy production. These were:

- Controlled thermonuclear fusion/fusion energy research
- Management of radioactive waste
- Radiation protection
- And other activities in the field of nuclear technologies and safety

The administrative structure implementing these research activities in Directorate J altered more than once during Framework 6. Although Directorate J was always comprised of just four operational Units, slight changes were made to the grouping of research priorities over the course of time. At all times, Directorate J maintained a Horizontal Unit.

Interviews comprised, the Head of Horizontal Unit and the staff member responsible for gender mainstreaming within it, as well as one SPO and the Head of Unit in an operational Unit. To anonymise results, interviewees will be identified only in terms of their location in either the Horizontal Unit or the Operational Unit.

Similar to Directorate E, SPOs undertake the work of administering projects. However, the division of responsibilities, described in interviews, between SPOs, Heads of Units, the Horizontal Unit and other staff, differs from that in Directorate E. The Horizontal Unit described their remit as one involving information, coordination and informing citizens of Directorate J's work.

> 'We do paperwork, we write the legal frameworks and we communicate with other organisations'[154].
>
> 'To explain what we are doing, so to say to the tax payer how the money is spent ... we try to spread the results ... we organise conferences to, not only to the general public but also the scientific public, this is one of the most important targets for us and I think that's the main goal.'[155]

This communication work, which the Horizontal Unit staffs describe, is predominantly aimed at the nuclear industry, though it also encompasses wider public communication and is broadly conceived as an accountability measure.

SPOs in Directorate J described their role as implementing the work programme according to an established negotiation and evaluation procedure, with the Head of Unit taking responsibility for writing the Work Programme.

> Interviewee: 'I'm a project officer ... so this is follow the contract and negotiate and also communication so dealing with the publications that we are doing.'
> Interviewer: 'so what does that really involve though?'
> Interviewee: 'I mean there's a procedure, I negotiate the contract, there is the evaluation procedure and we negotiate with the coordinator of the consortium'[156].

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[154] Research interview, Spring 2009, Horizontal Unit staff member Z.

[155] Research interview, Spring 2009, Horizontal Unit staff member A.

[156] Research interview, Spring 2009, Operational staff member E.

> 'You cannot have everybody drafting something, we only have one person, who makes a draft, and then the other persons, they contribute.'[157]

Directorate J also used 'new instruments' NoEs and IP, to deliver indirect actions. These projects follow the same procedures of writing calls, negotiation and so forth, described in the previous two chapters and in the Unit where fieldwork was conducted, these formed a priority. The Euratom Work Programme states:

> 'In areas of management of radioactive waste, radiation projection and other activities in the field of nuclear technologies and safety, the new instruments (integrated projects and networks of excellence) are recognised as being an overall priority means to attain the objectives of critical mass, integration of the research capacities, management simplification and European added value.'[158]

Policy Drivers in Directorate J

Discussion of aims within Directorate J, whilst showing similarities to and linkages with wider DG Research strategic aims, were expressed in terms related to Directorate J's discipline, nuclear research. Staff argued that the aims of Directorate J had been very stable over a long time. These were described as clearly laid out in the Framework and the Work Programme, giving an impression of precision and inflexibility, leaving little room for interpretation or negotiation.

> 'Essentially we're looking at safety, we're looking at waste, we're looking at technology as much as we can, even though that's the most controversial area, and we're looking at radiation protection.'

> 'Because these tend to be very long time scale research programmes. Take fusion for example: it's been going on since the 50s and will go

[157] Research interview, Spring 2009, Operational staff member E.

[158] Euratom Research and Training Programme on Nuclear Energy (2002-2006):3.

> on for a few more decades, so this is extremely long time scale research. The issues like radioactive waste management, we started research in the community maybe thirty years ago and we're still funding it now.'

> '[It's] defined by the original legal basis for the framework programme, which is always a Council Decision, its in European law … [That] sets the broad outline of the [work] programme and says what the thematic areas are and in that text you'll see nuclear safety, protection, radioactive waste management as thematic areas, so we are limited by that we can't go outside that.'[159]

Staff also emphasised the technical nature of Directorate J's remit and the exclusion of broader issues, in favour of an industry-centred remit focused on commercial application of nuclear technology for energy production. These aims of enhanced industrial application tie into wider pursuit of competitiveness in the EU. Nuclear technology for the production of electricity is thus argued as the fundamental target for Directorate J over others.

> '[its] specific industrial application, which is mainly nuclear energy ... but also in cases of medical uses, that is an application, its not really an *industrial* application, but its an end use of technology.'[160]

> 'Production of electricity through the use of nuclear power. I mean this is the essential industrial application of the nuclear science we're looking at.'[161]

Within Directorate J 'broader issues' were thus perceived as the responsibility of other areas of DG Research, on the basis that the Euratom Treaty provided a restrictive research agenda.

> 'It is *very limited* to the technical area of nuclear science and technology. We haven't got a remit for looking at broader issues.'[162]

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[159] Research interview, Spring 2009, Operational staff member N.

[160] Research interview, Spring 2009, Operational staff member N.

[161] Research interview, Spring 2009, Operational staff member N.

> 'We haven't got a remit for looking at broader issue ... we don't have a people programme on the Euratom, we don't have an infrastructure programme even. All these much more cross-cutting, general research considerations … are the responsibility of the EC programme ... we have to stay within the boundaries of the Euratom treaty.' [163]

Examining the text of the Treaty, the Framework and the Work Programme, however, portray a less clear cut exclusion of broader issues. The Treaty establishes the encouragement of research and the dissemination of technical information[164] as a task. The 6th Euratom Framework programme is preceded by an explanatory memorandum on the ERA. The Lisbon Agenda and the ERA Communication as well as the Commission Communication on Women in Science and the 'Action Plan'[165] to implement it are also explicitly referenced in the opening text of the Framework[166]. Socio-economic issues are also stated as a part of the Work Programme's aims:

> 'A particular effort will be carried out to take into consideration ethical, social, legal and wider cultural aspects of the research including socio-economic research and innovation resulting from the possible deployment, use and effects of the newly developed technologies or processes and scenarios covered by the three thematic priorities and the other activities.'[167].

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[162] Research interview, Spring 2009, Operational staff member N

[163] Research interview, Spring 2009, Operational staff member N.

[164] http://eur-lex.europa.eu/en/treaties/dat/12006A/12006A.htm.

[165] These refer to the commitments detailed in Working Paper such as GAPS and quotas, and the monitoring arrangements detailed within it and the Communication.

[166] Euratom Research and Training Programme on Nuclear Energy (2002-2006):5.

[167] Euratom Research and Training Programme on Nuclear Energy (2002-2006) Work Programme 2003.

In keeping with the articulation of these ERA-related imperatives emphasised in Directorate J's policy literature, training and infrastructures were also articulated as a significant part of Directorate J's work in interviews with all staff.

> 'Our main goal is to get national member states to collaborate more effectively for greater added EU value.'[168]

> 'To get the best brains, this is certainly a common problem in Europe.'[169]

Staff described acute training and skills issues in their field because nuclear research has become an increasingly unpopular career choice after safety scares and crises such as Three Mile Island and Chernobyl. Interviewees described how interest in nuclear technological development has waned as a result, whilst interest in ameliorative actions or radiation protection has increased. This prolonged unpopularity has resulted in an aging workforce, creating sector specific workforce problems which Directorate J seeks to address.

> '[This is] a major problem for maintaining competencies ... nuclear is the area which is most acute ... If you don't have qualified staff, if you don't have continuity of knowledge, then it could have an impact on levels of safety on operating plants'. The only area in nuclear which remains popular with new entrants, is radiation protection.'[170]

> '[The] nuclear workforce is ageing – well like everybody else. But the peak is moving toward an older age because of a downturn in nuclear over the last twenty years. The average age of the workforce has moved now into the mid 50s.'[171]

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[168] Research interview, Spring 2009, Operational staff member N.

[169] Research interview, Spring 2009, Operational staff member A.

[170] Research interview, Spring 2009, Operational staff member N.

[171] Research interview, Spring 2009, Operational staff member N.

> 'Ok so in radiation protection you've got maybe a younger age distribution, this is the only area where there was a growth area since Chernobyl [laughs]. You're looking at impacts on the environment ...take up by different species and radio-oncology ... even though it's still a minor area.'[172]

Training and research infrastructure, including human resource issues, have thus been tackled, through both specific projects, and 'mainstreaming' into the three thematic areas of reactor systems, waste management, and radiation protection. These actions have also been interpreted to focus on the development of skills in new/candidate EU countries, after statistics showed that research teams based in new member states were under-represented amongst Directorate J's successful applicants.

> 'We insist now within every big project, at least 5% of the total budget, not just our contribution, is dedicated to a training programme, so there has to be a work package of training programme, for instance support to post-docs even PhDs and involved in the research'.[173]

> 'We have a topic, which is, we will welcome any proposal which will lead to better involvement of new member states for example.[174]'

Staff also describe, how socio-economic issues are viewed as a particular barrier for nuclear development, because public opposition holds the field back.[175] A small part of Directorate J's research therefore focuses upon these 'non-technical' themes. Here,

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[172] Research interview, Spring 2009, Operational staff member E.
[173] Research interview, Spring 2009, Horizontal Unit staff member N.

[174] Research interview, Spring 2009, Operational staff member E.

[175] Research interview, Spring 2009, Operational staff member N.

actors in Directorate J describe actively seeking to see 'if there was a way' to use research money to explore these non-technical issues, which were perceived as relevant and related to Euratom's aims.

> 'Actually, we have some special projects on social acceptance mainly in the area of waste management, for example, if you need to build a deep geological repository. There are some social issues linked to this, so we are doing projects, and they have to understand this.'[176]

> 'The main stumbling block now, the main impasse, is in the socio-political areas. So we thought, is there a way of looking at this with research money and to facilitate and to optimise the way it's dealt with in the governance context.[177]'

Whilst also describing how cross cutting themes are mainstreamed into project, staff distinguish quite clearly between 'cross-cutting' issues related to training and infrastructure, and technical areas of research.

> 'Basically we have five areas which we cover in the research which is waste management, radio protection is the second then, reactor systems is the third 'and we've got some cross cutting issues, infra structures, supporting infrastructures and uh, what else, and then education and training.'[178]

> 'These cross-cutting themes are mainstreamed into thematic areas of research[179]'

> 'There are .. the technical thematic areas but in each area [we're] also responsible for promoting human resources aspects, education and training in particular.'[180]

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[176] Research interview, Spring 2009, Operational staff member E.

[177] Research interview, Spring 2009, Operational staff member N.

178 Research interview, Spring 2009, Operational staff member E.

[179] Research interview, Spring 2009, Operational staff member N.

180 Research interview, Spring 2009, Operational staff member E.

Interpreting Research Aims: Industry Role

Discussing the formulation of Directorate J's strategy and the development of the work programme, staff did not describe competing research aims or the requirement for significant amounts of interpretation on their part. Rather, they described a reliance on industry participation in the formation of policies. One such tactic is a close reliance on technology platforms.[181]

Directorate J works with three technology platforms: Sustainable Nuclear Systems and Safety, Nuclear Energy, and Geological Disposal and a very similar initiative including public sector organisations called a Joint Programming Initiative, in the field of Radiation Protection. The Work Programme also indicates contact with several established nuclear organisations such as the International Energy Agency, the International Atomic Energy Agency and national nuclear programmes of the USA, the Newly Independent States of the Former Soviet Union (NIS), Canada and Japan.[182] These associations exert a very direct impact on Directorate J's work. Staff described how closely these were involved in the formation of policy and how 'vague' topics in the Work Programme allowed applicants autonomy to decide precise research projects. This close industry contact is viewed in Directorate J as a strategy to ensure maximum responsiveness to industry.

> '[We] are actually wording our work programme in the way that .. we can finance a project which is governed by ... the documents that are issued by those platforms.'[183]

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[181] See Chapter Four – most areas of research in DG Research have industry led technology platforms.

[182] EURATOM Research and Training Programme on Nuclear Energy (2002-2006) Work Programme 2003:4.

[183] Research interview, Spring 2009, Operational staff member E.

> 'We draft the topic in the way we say we'll support proposals that will actually make a difference, which will help to implement geological disposal, so this is really vague wording.'[184]

> 'So we know we're focusing on the key issues that are most important to the majority of nuclear programmes in Europe. So that's extremely important.'[185]

> 'All the key R&D players are in this platform.'[186]

Industry also takes the lead in the devisal of nuclear education/training aims, through a Euratom established network called the ENEN – European Nuclear Education Network.

> 'It was set up originally with support from the programme in 1985 and is now a separate non-profit making organisation itself ... and this is the main part of our training programme. So again, yeah, this is a key aspect to the whole strategy.'[187],

Efforts to efficiently utilise human resources were not purely related to encouragement of training opportunities and participation though. Directorate J also aimed to facilitate mutual recognition of qualifications. This policy closely mirrors that described in the ERA Communication.

> 'The project that we are providing should provide some basis of this mutual recognition of the training and education that is provided'.

Staff described how policy makers, NGOs and civil society are not significantly represented in the membership of these consultation mechanisms. Civil society and policy maker input is understood to occur predominantly at the member state level,

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[184] Research interview, Spring 2009, Operational staff member E.

[185] Research interview, Spring 2009, Operational staff member N.

[186] Research interview, Spring 2009, Operational staff member N.

[187] Research interview, Spring 2009, Operational staff member E.

partially because nuclear energy providers are in relatively close contact with policy makers already. Actors who are unable to participate in technical discussion were also argued to self select out of consultative groups, and NGOs which are critical of nuclear power are intentionally excluded on the basis of political sensitivities, a small number of pro-nuclear environmental NGOs are included.

> 'The policy maker doesn't, well in the sense that we have the major nuclear research organisations, are essentially publicly funded and as such they set national policy.'[188]
>
> 'Well whatever happens in each country'[189]
>
> 'You have to appreciate that this are is very politically sensitive and the majority of environmental organisations have an anti-nuclear agenda.'[190]
>
> 'Since were talking actually about nuclear technology issues and very technical aspects of nuclear, I think the organisations feel there is no role for them to play in this type of structure.[191]
>
> 'We do have civil society agendas as well in the nuclear energy technology platform. A small number of NGOs, these are the NGOs which are pro nuclear ... and we would encourage any civil society organisation, who do actively have something constructive to contribute, to join.'

Broader civil society participation concerning wider issues of energy, and by extension nuclear does not, therefore, occur through the auspices of Directorate J in DG Research. This is understood to occur through Directorate General Energy and Transport's 'Discussion Forum on Energy'. This civil society engagement is

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[188] Research interview, Spring 2009, Operational staff member N.

[189] Research interview, Spring 2009, Operational staff member E.

[190] Research interview, Spring 2009, Operational staff member N.

[191] Research interview, Spring 2009, Operational staff member N.

understood as a non-technical issue, separate to research and separate to Directorate J's work.

> '[The Discussion Forum in DG Energy and Transport] is a broad based, stakeholder, non-technical platform looking at all issues: risks, opportunities, transparencies issues.'[192]

> 'It's a non-technical discussion; I mean it's not like us who are responsible for research.'[193]

Discussion: Directorate J Drivers and Practices

Findings from interviews in Directorate J therefore show specific disciplinary aims which have been clearly defined and stable for some time. Viewed through the lens of the theoretical approach elaborated in this thesis, two themes can be observed in respondents' descriptions of Directorate J's agenda. Firstly, generic policy aims are expressed in terms of nuclear specific challenges, and secondly, technical and non-technical themes are quite acutely differentiated.

Commercial effectiveness, for example, is regarded as a driver within Directorate J, but it is conceived of, within, in terms related to the nuclear industry only, rather than through reference to generic scientific aims. Similarly, skills and human capacity are understood within the context of the specific problems and challenges faced by the nuclear industry: the aging workforce and disciplinary unpopularity create an acute problem of an aging workforce and the maintenance of competencies. Human resources issues are therefore recognised as a key focus for action in Directorate J, even comprising part of the title of the Euratom Framework. These human resource imperatives are also found in DG Research's generic strategic

[192] Research interview, Spring 2009, Operational staff member E.

[193] Research interview, Spring 2009, Operational staff member N.

policy in the ERA[194] (explicitly discussed in the explanatory memorandum attached to both Frameworks) and throughout DG Research's policy literature. This generic policy jargon is not however used in Directorate J, even though some of their actions, toward the development of mutually recognisable qualifications for example, are practically identical.

Limited public support for, and outright opposition to, nuclear industry is also acknowledged as a barrier to the nuclear industry. Engagement with this latter challenge is limited however and respondents did not emphasise interdisciplinary work within their field. Interviewees explained that a concentration on technical research precludes this, arguing that the Euratom Treaty provides a more restrictive programme of research than that operating in other areas of DG Research. In some instances however, this strict remit has been interpreted more widely and pro-actively. Socio-economic issues and governance have, for example, been tackled in waste disposal, and projects aiming to boost the participation of new member states have been devised in response to their low participation.

Examining Directorate J's Work Programme also yields written commitment to socio cultural aspects of research.

> 'A particular effort will be carried out to take into consideration ethical, social, legal and wider cultural aspects of the research including socio-economic research and innovation resulting from the possible deployment, use and effects of the newly developed

[194] See Chapter four. Briefly, these emphasise the creation of an 'internal market' where researchers, technology and knowledge can freely circulate, as well as the effective use of all human resources in the population as effectively as possible and to conduct research on human resources and policy issues at the European and MS level' .

> technologies or processes and scenarios covered by the three thematic priorities and the other activities.'[195]

Reviewing these written policies in view of the IPA approach elaborated in earlier sections of this thesis and the results found in Chapters Four and Five, we are compelled to deduce that the policy remit in Directorate J is therefore not formally exclusive to technical issues. It includes commitment to consider ethical, social, legal and wider cultural aspects, *use and effects* of newly developed technologies or processes, and scenarios covered by thematic priorities and other activities (my emphasis). Theoretically, this creates space to explore new uses of technologies (such as radiation in cancer screening and prevention, for example) or to engage with ethical issues; the interpretation of this policy remit has been narrow.

The processes by which strategic aims are interpreted into action are not undertaken by SPOs in Directorate J. Heads of Units draft the Work Programme in close conjunction with permanent consultation mechanisms which are themselves empowered to produce documents. According to interviews the work programme duplicates the *strategic* statements produced by technology platforms. Units also devise topics which are worded to allow maximum industrial autonomy in deciding how to use funds. The identification of skills and training needs is similarly closely led by ENEN. This research community which these mechanisms constitute is dominated by industrial actors involved in the production of electricity using nuclear technologies, itself populated with mature structures representing narrow and specific interests, being comprised largely of international networks of nuclear industry actors and national state nuclear development programmes. The exclusive aims of nuclear technological development for electricity generation are therefore unanimously shared and continuously replicated by these associations and this

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[195] Euratom Research and Training Programme on Nuclear Energy (2002-2006):5.

public is ascribed a high degree of autonomy and authority in shaping the strategic aims of Directorate J.

Through these processes the views of a single industry and *its* interpretation of scientific priorities are reinforced and duplicated through both multiple associations (consultation mechanisms such as Technology Platforms) and documents (Technology Platform's strategic statements, the Work Programme, project applications) contributing to what one respondent described as 'stable' aims, which have been steady for the last three decades, and are forecast to remain so.

Directorate J therefore presides over a narrow and stable research remit, closely shaped by the interests of existing industry to the virtual exclusion of other industrial nuclear scientific applications, socio-economic or political dimensions, or impacts and/or contestation of nuclear energy per se. It is also isolated from other energy production areas or associated issues.

Directorate J and the work processes it presides over, thus constitute a stable, protected environment where the nuclear industry can access resources to develop technologies and where conflict over the premise of developing nuclear power, or competition to divert resources to other aims, has been externalised elsewhere, to facilitate this. These policy making processes therefore recursively stabilise a narrow view of the energy agenda excluding conflict both through the composition of associations and empowering them to create policy documents. A distinct boundary between technical and non-technical research is maintained, where the former is prioritised.

Driving GM in Directorate J

The Role of the Horizontal Unit

One member of staff in the Horizontal Unit in Directorate J was assigned to attend the WiS meeting convened by the Gender Unit, and to take responsibility for gender mainstreaming. On the whole however, the Horizontal Unit did not consider itself as taking the lead on GM and many aspects of this WiS member's occupational status made carrying out the GM role very difficult. Firstly, the WiS member was employed on a temporary contract as a communication professional, on the basis of their expertise as a journalist. As a result, this staff member did not hold the experiential knowledge of an SPO's role, public sector scientific research policy, or a background in nuclear research or any other physical science. Furthermore, their duties as a communication professional, running events and overseeing communication publications did not relate to, or overlap with, the formulation of Work Programme, or the administration of projects. As a result of this predominately outward facing role and professional background, this person did not have insight into the administration of the work programme or the SPO role and was not able to describe the structure of Directorate J.

> 'Communication I know, but only communication. I don't know about the projects.[196]

Interviews with the Head of the Horizontal Unit and the staff member assigned responsibility for GM, showed both had some difficulty describing details of the policy or the processes and actors it involved. One staff member initially refused to be interviewed but was persuaded after meeting me in person. After agreeing to meet me to discuss 'attracting women into science' the staff member refused to be recorded discussing GM because they believed that they did not know enough

[196] Research Interview, Spring 2009.

about the agenda. The interview was then terminated after eight minutes. The notes from this conversation nevertheless yielded some quotes and useful data on the role of the Horizontal Unit and its engagement with the GM agenda.

Horizontal Unit staff expressed uncertainty or anxiety about gender issues when questioned, stating nuclear's unsuitability for GM, or anxiety that the policy could be unfair. One staff member described the production of communication materials that were more feminine, as part of the response to the gender agenda. Another Horizontal Unit staff member described gender mainstreaming as a state of mind, referring to the reporting obligations it entailed.

> "Hard issues, gender [shakes head]."[197]
>
> "You have no idea how difficult it is."[198]
>
> 'It's not so easy because in nuclear field [it] is a very masculine world because of nuclear, because of the subject, because you have a lot of engineers, a lot of physics, but always men a lot of men, because there are not so many women again, in the field'[199],
>
> 'We have rules and guidelines to maximise the presence of women which we do, you know, without being stupid or penalising men in programmes, projects, evaluation panels and expert [committees]'[200].
>
> 'We succeeded to have this kind of brochure and its nice, its nice ... its completely different, its more feminine in the end if you want to call like this.' [201]

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[197] Research interview, spring 2009, Horizontal Unit staff member Z.

[198] Research interview, Spring 2009, Horizontal Unit staff member A.

[199] Research interview, spring 2009, Horizontal Unit staff member A.

[200] Research interview, spring 2009, Horizontal Unit staff member Z.

[201] Research interview, Spring 2009, Horizontal Unit staff member A.

> 'Gender here is understood as a state of mind, we think of it every day, every day because we are told about it all the time!'[202]

Staff were not sure of the remit of the Gender Unit and the WiS group, with some of the statements revealing a confusion with DG Research GM policy and wider equal opportunities and gender awareness training.

> 'I *think* its purpose is to, to spread gender sensitivity in the European Commission, and they produced a report for example on the Research Framework Programme and it was quite interesting because you can see in this report, how many women participate in the projects in which field'.[203]

> 'When you work for the commission, even if you are a contractor, you have something on the gender issue.'[204]

Both staff stated they had participated in such training. The learning outcomes this had resulted in, however, had not proven applicable to help understand GM.

> I've been to a course on gender just recently, a mandatory one, on gender!'[205]

> 'They tell us all the time, the problems the statistics the issues.'[206]

> 'I don't remember and I didn't follow the training after, but we have a lot of training on gender, we have.[207]

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[202] Research interview, spring 2009, Horizontal Unit staff member Z.

[203] Research interview, spring 2009, Horizontal Unit staff member A.

[204] Research interview, spring 2009, Horizontal Unit staff member A.

[205] Research interview, spring 2009, Horizontal Unit staff member Z.

[206] Research interview, spring 2009, Horizontal Unit staff member Z.

[207] Research interview, spring 2009, Horizontal Unit staff member A.

One of the staff in the Horizontal Unit demonstrated an awareness of the second 'prong' of DG Research's GM policy - the gender dimension of research or GAPs. This individual explained that integrating a gender dimension into nuclear research was unintelligible to research teams and that the staff did not feel that the Gender Unit had been helpful in equipping them with ideas or tools to integrate gender into research.

> 'People didn't know how to react to gender in GAPs, we do research in very technical abstracted issues – [people didn't know] how to orientate to gender using research.[208]

The participation of women was the most thoroughly understood part of the gender mainstreaming agenda in the Horizontal Unit. Initially, the Horizontal Unit commented that monitoring and reporting on gender was a considerable part of its gender equality activity and was undertaken very successfully. Staff noted they were subject to oversight from elsewhere in the Commission. This description of recruitment oversight was further supplemented by the observation that men were under-represented in secretarial roles and discussion of the difficulties which redressing this balance entailed, though it was not possible to explore what these barriers or reasons might constitute.

> 'I have to report all the time on it and I realise when I do that I have done a very good job!'[209]
>
> 'We have to give an explanation why we didn't recruit a woman.'[210]
>
> 'Of course gender also means employing men in secretarial roles, but for some reason people don't want to employ men in these roles ...

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[208] Research interview, spring 2009, Horizontal Unit staff member Z.

209 Research interview, Spring 2009, Horizontal Unit Staff Member Z.

210 Research interview, Spring 2009, Horizontal Unit Staff Member Z.

> we had a good man. We wanted to employ him and for some reason they didn't want to take him'. [211]

Questioned on the details of women's participation which this monitoring activity revealed, staff in the Horizontal Unit could not supply, or locate or signpost to, the relevant information. Interviewees suggested a different Unit in Directorate J and a different Directorate in DG Research, as carrying responsibility for gender in human resource issues. On producing the EU's monitoring information,[212] which showed low levels of women's participation in the Directorate's committees, the figures were refuted on the basis that Directorate J's data had not been properly collected.

> 'We weren't consulted on this, we had a lot of problems with that [piece of work]'. [213]

Asking how the Horizontal Unit had driven GM, interviewees argued this was the Gender Unit's remit. Interviews with staff in the Gender Unit indicate that it did indeed make efforts to drive gender in Directorate J, resulting in the insertion of topic concerning the consequences of radiation for women.

> 'This [gender] is the job of the Gender Unit'. [214]

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211 Research interview, Spring 2009, Horizontal Unit Staff Member Z.

[212] European Commission ERA (2008) Monitoring Progress Towards Gender Equality in the Sixth Framework Programme Synthesis Report Aeronautics and Space, Nanotechnologies and Nanosciences knowledge-based multifunctional materials and new production processes and devices, Sustainable Energy Systems, Euratom and Sustainable Surface Transport:8. This report shows 5% female participation on evaluation panels, 9% on the Programme Committee and 12% on Advisory Groups and 10% amongst staff (2008:7)

[213] Research interview, Spring 2009, Directorate J, Horizontal Unit Staff Member Z.

[214] Research interview, Spring 2009, Directorate J, Horizontal Unit Staff Member Z.

Reviewing strategic documents, does reveal written commitments to undertake GM in Directorate J though. Directorate J's 2003 Work Plan for example states:

> 'reinforcement of the *role of women in science in research* both from the perspective of equal opportunities and *gender relevance of the topics* covered'[215] will be attempted where possible.

Viewing the interview data, in terms of a knowledge process we can characterise these results as follows: abstract commitments to gender equality and to mainstream gender stated in written documents have not been translated *into action* by Horizontal Unit staff.

Horizontal Unit staff could not describe specific actions to increase the number of women in research, did not insert any gender aspects into its research topics in the Work Programme, or support SPOs or projects in dealing with GAPs. Indeed, centrally collated DG Research monitoring information shows that over half of projects obligated to compete a GAP (i.e NoEs and IPs)[216] did not. DG Research's internal monitoring also notes that success rates of projects which did include a GAP was lower than amongst those which did not.[217]

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[215] Euratom Research and Training Programme on Nuclear Energy, Work Programme (2002-2006):5 My emphasis.

[216] As this was compulsory in all areas during Framework 6.

[217] Monitoring Progress Towards Gender Equality in the Sixth Framework Programme, Synthesis Report, Aeronautics and Space, Nanotechnologies and Nanosciences, knowledge-based multifunctional materials and new production processes and devices, Sustainable Energy Systems, Euratom and Sustainable Surface Transport (2008).

Prima face these actions may appear the product of a passive response. Reference to IPA/STS/SK concepts however, urge us to deepen our analysis and ask how these outcomes came about. Here it is useful to widen analysis and examine wider policy processes and the manner in which persons and documents have been mobilised to coordinate action. Directorate J's Horizontal Unit staff did not emphasise a role which involved significant coordination between operational Units or involvement in the negotiation of the Framework or the Work Programme. Results from the previous section also show how the interpretation of strategic policy is largely given over to permanent consultation mechanisms, that is industry representatives, rather than SPOs.

Furthermore, the allocation of personnel chosen by the Horizontal Unit to participate in the WIS group and oversee gender in Directorate J, did not maximise the possibility for active GM implementation. This individual was not empowered to translate commitments to GM into action, as their job role did not include knowledge and experience of the project administration process, specific experience in public administration or science. These circumstances presented multiple barriers to this individual devising a locally relevant agenda for GM. They also lacked the contact with SPOs which might have enabled then to mobilise any such agenda. These actions thus effectively prevent a local elaboration of GM which might coordinate new actions in keeping with the agenda envisaged by the Gender Unit. As a result notions of GM within the Horizontal Unit remain rather hollow, unintelligible or, simply, 'difficult'.

Other actions actively contained and minimised the GM agenda. Analysing the Euratom Work Programme in conjunction with the guidance compiled by

Directorate J, for evaluators[218], also shows that local processes of interpretation within Directorate J have explicitly interpreted the abstract commitments made to GM in the Framework and the Work Programme *out* of the actual project administration process.

In addition to the paragraph articulating commitments to consider socio economic, legal or ethical issues/impacts and gender, the Work Programme also states, *in bold*, that the specific objectives of the programme (i.e nuclear related activities) will take precedence over all others in the evaluation of projects. Guidance for evaluators also list eight criteria as 'principal issues of relevance' (to all tools), along with guidance on how to score project applications in relation to them. These eight criteria do not include socio economic, legal or ethical issues/impacts and gender.[219] Evaluators are also specifically instructed to place programme specific aims, which are described as '*the sine qua non'* of the Work Programme and the Framework, above all 'additional points' such as gender or other social or impact issues, and were also not supplied any guidance on what gender aspects could or should be incorporated.

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[218] Common evaluation procedures for evaluation proposals attached to the work programme, Euratom Research and Training Programme on Nuclear Energy, Work Programme: 35. This document is supplied to external 'experts' who are asked to independently review the quality of projects and recommend them for funding or rejection.

[219] Gender, ethical and social issues are listed as additional points which are to be addressed at 'any appropriate moment in the evaluation' (Euratom Research and Training Programme on Nuclear Energy (2002-2006):36) and are included within the specific criteria for NoE's under the category of organisation and management of proposing projects, (Euratom Research and Training Programme on Nuclear Energy (2002-2006): 38).

The documents structuring working processes within Directorate J thus bound impact, social issues and gender out of Directorate J's remit by actively excluding them from consideration or reward in the application process. Project applicants following these instructions would be unlikely to include any impact, social issues or gender in their applications. Evaluators are also instructed in such a way that they are unlikely to ascribe positive significance to gender issues in the processes of evaluating and scoring projects [220] whilst specific (technical) aspects of research are given attention and attributed with great significance and reward. These processes stabilise a notion of research in Directorate J which heavily priorities specific technical aims and excludes research teams approaching alternative or more widely interpreted scientific agendas.

SPOs Role in Driving GM

Interviewees in the operational unit showed some confusion over GM commitments and a clear assertion that GM activities were not actively undertaken. One of the first points of reference in these discussions was 'the questionnaire', the term which staff here used to describe the GAP.

> 'I mean we don't have any special measures, I mean we have this horizontal thing in the description of our work, as everybody has, you know gender-whatever, and the questionnaire, so you'll have heard about this from other colleagues, so we have nothing special.'[221]

[220] In fact, statistics show it may even have disadvantaged projects. Monitoring Progress Towards Gender Equality in the Sixth Framework Programme, Synthesis Report, Aeronautics and Space, Nanotechnologies and nanosciences, knowledge-based multifunctional materials and new production processes and devices, Sustainable Energy Systems, Euratom, and Sustainable Surface Transport (2008).

[221] Research interview, Spring 2009, Operational staff member E.

> 'I know that our project had to fill out questionnaires at the start and the end of the project on certain socio-economic issues and one of them was gender.'[222]

One interviewee argued that Directorate J was not subject to GM, on the basis of the specificity of nuclear research. This specificity was attributed to the legal basis of nuclear research in the Euratom Treaty. To explore this view the interviewer produced some of the documents stating that all Directorates have to undertake GM and to complete GAPs. After checking CORDIS, the Commission's online document repository during the interview together, it was established that GAPs (also) had to be completed in IPs and NoE in Directorate J.

> 'I have to be careful here because I don't remember exactly what was requested. Euratom has a completely different set of rules, different rules for participation, based heavily on the EC programme. But it is not always the case that everything is translated equivalently between the two for legalistic reasons ...
> I think it was mainly an obligation to report on what the gender balance was, rather than taking steps to encourage you know encourage ... but you know I would stand corrected on that [...] If you give me 30 seconds I can actually find the page on the website ...I might be able to tell from the actual document
> ...[reads out] 'reporting the implementation of the Gender Action Plan? [pause] IPs and NOEs only – integrated projects and network selection.
> [...] This reporting consists of the completion of a questionnaire on the activities and the progress made in implementing the project's gender action plan".'[223]

By discussing GAPs, staff thus understood the instrument in terms of reporting, that is, the completion of the monitoring questionnaire *regarding* the GAP, rather than any *activities or actions* it might contain. Indeed, both respondents explicitly described the completion of GAPs as a hollow activity. One described how research

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[222] Research Interview, Spring 2009, Operational staff member N.

[223] Research Interview, Spring 2009, Directorate J, Operational staff member N.

teams might complete tokenistic GAPs, whilst the other described checking whether the GAP was there, without engaging with its content. Where content was discussed, interviewees indicated that GAPs were probably understood in terms of counting women.

> 'I think they probably addressed it in a rather token manner.'[224]

> 'We do nothing in a particular I'll check if its obligatory to have the gender action plan, so I just check if it's there and what they write about it.'[225]

> 'They write, yeah, we have so many women in the projects in those kinds of jobs, things like that[226]'

Interviewees described two dimensions of gender policy activities when pressed, differentiating between the content of research and the participation of women within it, though staff did not describe supporting research teams in devising GAPs with regard to either of these elements. Both interviewees identified a project in Directorate J where the research had sought to include gender. This project has investigated the diagnosis of breast cancer and was identified and devised by the Gender Unit.

> 'There's kind of two directions from which to approach the [gender] issue: first of all, in the actual research itself, are there different issues that we should be looking at, ummm, relating to men and women?'[227]

> 'We've got that research project which is looking specifically at gender issues where we're looking at particular gender issues, so

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[224] Research Interview, Spring 2009, Operational staff member N.

[225] Research Interview, Spring 2009, Operational staff member E.

[226] Research Interview, Spring 2009, Operational staff member E.

[227] Research Interview, Spring 2009, Operational staff member N.

> that's on the other side the impact side. [Interviewer: So that was?] This is on diagnosing breast cancer. [228]

One interviewee mentioned obligations to boost the participation of women within DG Research's own committees, although this individual was unclear on what their responsibilities were and did not mention the 40% target applying to these decision making bodies.

> 'In the committees over which we control the membership, whether it's written or unwritten I don't know, but there is a way, I think we have to favour women if there's nothing else differentiating. Very difficult to say exactly when tracking?'
>
> 'If we can suggest members then we will take steps to find women of the equivalent standard and suggest those.'

Monitoring reports from DG research indicate that there has been an 8% increase in the participation of women on Euratom's Advisory group since Framework 6 began. This report also notes; 'the presence of women on the Euratom Evaluation Panels has remained stable and almost insignificant at 5%.'[229]

Interviews showed that SPOs had not received any documentation or information from the Gender Unit. Each described how that the Horizontal Unit would have more regular contact with them and would usually deal with gender to a greater degree.

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[228] Research Interview, Spring 2009, Operational staff member N.

[229] European Commission ERA (2008) Monitoring Progress Towards Gender Equality in the Sixth Framework Programme Synthesis Report Aeronautics and Space, Nanotechnologies and Nanosciences, knowledge-based multifunctional materials and new production processes and devices.

> 'They have more contacts with the equality unit in the Horizontal Unit'[230]

> 'I mean usually it would be, mainly the Horizontal Unit who took on board these issues first.' [231]

Although these responses indicate some confusion over precise GM obligations, some stable and relevant perceptions of GM can be inferred. Staff sincerely do not believe that GM applies in their field. One interviewee argued that GM does not apply in Directorate J because the Euratom Treaty provides a more restrictive basis for action than that in place in other Directorates. Inspection of the official instructions and documentation concerning Framework 6 with this member of staff revealed, however, that Directorate J *is* subject to GM. DG Research's monitoring information on GM also states this to be the case and articulates some criticism of the Directorate's performance.

Both interviewees articulate an understanding of GM obligations in terms of a monitoring exercise, rather than an active process. GAPs were consistently referred to in interviews as 'the questionnaire', and respondents were comfortable discussing how tokenistically they were dealt with. This was regarded as unproblematic and sufficient. Neither respondent indicated a view that they were responsible for GM or the effective implementation of GAPs, each delegating responsibility to the Gender Unit, the Horizontal Unit and, implicitly, to project teams (to a degree). Staff were also unable to describe in any detail what actions had (or could be) taken to boost the number of women in decision making.

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[230] Research Interview, Spring 2009, Operational staff member N.

[231] Research Interview, Spring 2009, Operational staff member E.

This points to a dynamic similar to that found in the Horizontal Unit: commitments to gender equality remain on paper and have not been translated into action. Interviews in this Unit also, however, show more clearly that staff find the notion of acting on gender inequality largely unintelligible – neither are able to discuss or consider what GM might entail *in terms of action*. Moving away from specific discussion of limited GM action and reviewing staff members' broader ideas about gender and gender inequality enable us to understand this stance in greater depth. This analysis has been split to consider firstly staff members' broad perceptions of gender inequality as a policy issue and secondly the underpinning policy positions.

Gender Knowledge in Directorate J

Interviews showed very consistent interpretations of the gender inequality *problematique* in Directorate J. All staff perceived the gender policy issue primarily as women's lack of interest in science and often expressed their views in quite strong terms. Estimating the details of women's representation in their field and Directorate J, figures varied quite substantially, with staff perceiving some nuances in the distribution of women across fields of nuclear research.

'Women's Low Participation'

All staff interviewed in Directorate J, bar one, viewed their sector as extremely male dominated:

> 'If you look around the gender distribution it's *extremely extremely* male dominated.'[232]

When asked why so few women participated in the field, interviews showed firm and consistent views that women self-selected out of nuclear science. The reasons

232 Research interview, Spring 2009, Operational staff member N.

for this self exclusion included explicitly essentialist views about the preferences of women. All staff responded explicitly that women avoid 'the scientific' and the technical. Two also noted the (additional) impact of teaching methods in schools.

> 'Hard sciences' such as nuclear, women are not interested in.'[233]

> 'This is a hard science, in hard sciences you know ... chemistry is more prone to women as a natural identification.'[234]

> 'Alot comes from the fact it's a very science based discipline.'[235]

> 'I think it's just the subject, its our society, you can find a lot of women in the university in something you know like you [points at interviewer], doing something not very scientific.[236]

> 'This problem, because the school [hits table] because of the school, because of the subject, because it's nuclear so you don't have a lot of women who are interested in it.' [237]

Although all staff argued strongly that women do not like science, half also noted when pressed for further details, that women's participation in nuclear research is higher in the 'new' member states. These respondents also described how women were better represented in the radiation protection sub-field of nuclear science, with one explicitly mentioning that this might be linked to the application of this technology to (breast) cancer prevention. One respondent subsequently reflected further on the details of women's participation in research projects, remarking that higher proportions of women could be found in non-technical areas but that

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233 Research interview, Spring 2009, Horizontal Unit staff member A.

234 Research interview, Spring 2009, Horizontal Unit staff member Z.

235 Research interview, Spring 2009, Operational staff member N.

236 Research interview, Spring 2009, Horizontal Unit staff member A.

237 Research interview, Spring 2009, Horizontal Unit staff member A.

radiation protection, where women's participation is higher, is also a very technical field.

> 'The new member states, I've noticed, now whether this is my impression, that there is a better gender balance in these technical areas and certainly younger as well.'[238]

> 'Some purely technical projects like in radiation protection, there are also many women and this is very technical, so it depends. ' [239]

> 'I had the project with the social aspects so, yeah, usually there are also women there [laughs].'[240]

> 'For example, for breast cancer medicine, in this project you can find a lot of women researchers, because of the subject.'[241]

The basis of perceptions as to the quantity of women in the field was always anecdotal and usually produced estimates which differed significantly from those indicated in DG Research's EU wide and MS level data.[242] All respondents drew on personal experience, producing rather inaccurate estimates. One respondent under-estimated female participation by between 12% and 18%,[243] on the basis of his experiences as an undergraduate over 25 years ago.

> 'When I graduated there were only 2 women out of 100, [companion interjects, '2 out of 25 in my year'].'

> 'I suppose at school there are fewer women interested in maths, physics, chemistry maybe than men. Certainly this was the case

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[238] Research interview, Spring 2009, Operational staff member N.

[239] Research interview, Spring 2009, Operational staff member E.

[240] Research interview, Spring 2009, Operational staff member E.

241 Research interview, Spring 2009, Horizontal Unit staff member A.

242 Such as the She Figures, ETAN Reports or monitoring materials specific to DG Research.

[243] She Figures 2003: 114

> when I was at university and whether it's still the case, I suspect it still is ...'[244]

Another staff member described their own working environment to estimate that the numbers of women on the Advisory and Programme Committees was likely to be very low. Monitoring information shows women's participation on these committees in Directorate J stands at 5% (Evaluation Panels) and 12% (the Advisory Group).[245]

> 'Put it this way, [we've] got nine scientific staff, they're all male, they're all, not quite, but nearly all of them 50 ... [We've] got one woman'[246]

> 'There are relatively few women. There are some but there are relatively few.'[247]

One respondent, (who had previously argued women do not like science) argued that across the projects in Directorate J, around half of the participants were female. This contrasts quite starkly with DG Research's monitoring information, which finds female participation in projects in Directorate J was 15%.[248]

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[244] Research interview, Spring 2009, Operational staff member N.

[245] European Commission ERA (2008) Monitoring Progress Towards Gender Equality in the Sixth Framework Programme Synthesis Report Aeronautics and Space, Nanotechnologies and Nanosciences, knowledge-based multifunctional materials and new production processes and devices, Sustainable Energy systems, Euratom, and Sustainable Surface Transport: 7.

[246] Research interview, spring 2009, Operational staff member N.

[247] Research interview, spring 2009, Operational staff member N.

[248] European Commission ERA (2008) Monitoring Progress Towards Gender Equality in the Sixth Framework Programme Synthesis Report Aeronautics and Space, Nanotechnologies and Nanosciences, knowledge-based multifunctional materials and new production processes and devices, Sustainable Energy systems, Euratom, and Sustainable Surface Transport: 8.

> 'I think its maybe 60 [men] to 40 in technical projects, 60 women and 40 men and in non technical projects it's vice versa, so in the end its 50:50.'[249]

Quoting or showing staff official statistics usually surprised staff and, in one instance, resulted in demands for evidence. In the Horizontal Unit (as stated above) DG Research figures showing the participation of women in Directorate J were disputed.

> Uh, aware – well, difficult, if you ask me does this exist? I say, yes, but, if you ask me, am I aware? I'd have to have first hand evidence of this taking place and that would be difficult for me to actually ... All I know is that there is a clear male domination within certain sciences that we are dealing with in my unit.'[250]

Developing the conversation to explore women's participation in greater detail was difficult. Discussing phenomena such as the leaky pipeline[251] or the arguments that discrimination, institutional or professional culture affected the opportunities for women in nuclear research, resulted in rebuttals. Some of these took the form of arguing the gender neutrality of the Commission's rules or stating that women were welcome. Women's representation was also argued as satisfactory and meriting no intervention. One respondent commented at length that organisational culture was not a concern:

> 'We are the European Commission, so eh, it's a public institution and the rules are the same for everybody,'[252]

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[249] Research interview, Spring 2009, Operational staff member E.

[250] Research interview, spring 2009, Operational staff member N

[251] Whereby women's presence diminishes with each step up the hierarchy in science.

[252] Research interview, Spring 2009, Horizontal Unit staff member A.

> 'There is no gender issue at the end. The project is open to everybody, if there are women they are more than welcome, but I mean it's for everybody?'[253]

> 'I dunno. Maybe [responding to the question about institutional culture]. We don't really feel it would be needed because, well I think we've got a good balance. It's not, because we feedback and well it's maybe 60:40 in social and [laughs] 60:40 in technical. We don't really see a big difference.' [254]

> 'Ok there could be maybe something you could do along those lines, in certain areas, in certain organisations. In my personal opinion, it's not determined by the science area, it's determined by the type of organisation that's responsible. If that organisation is very conservative, very traditional and women don't feel happy developing their careers there because they feel there's going to be a conflict situation, then this will be the end result. I don't think, personally, that the nuclear industry is like that, or more so than any other area. Maybe it's not quite as broadminded as the area you quoted but I can't really judge. But I think it's essentially, I think it's a reflection of what goes on much earlier: science is less sort of um interesting to women for some reason, less appealing to women and it is just a chain reaction from that point on'

Whilst the diagnosis of women's low participation which interviews yielded was thus comparatively simple in the first instance, exploring the issue further resulted in some contradictory responses. In this latter quote, the respondent indicates that though organisational culture could affect women's prospects, or how happy they would be, it is not likely to be an issue in the nuclear industry, or to be specific to the nuclear industry; women's low participation in nuclear is lower than in other scientific areas, but that this is not attributable to nuclear research as a field; and that women's lack of interest in science is the fundamental cause. This respondent also argued that organisational/industrial culture lies outwith the remit of Directorate J and affected its partners only.

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[253] Research interview, Spring 2009, Horizontal Unit staff member A.

[254] Research interview, Spring 2009, Operational Staff Member E.

Some of the EU's materials on women's participation in Directorate J's research suggest, however, that examining whether any practices *within* Directorate J might affect the participation of women could be merited. For example the 1999 ETAN Report showed that 42% of male applicants for a Marie Curie scholarship in the field were successful compared to 28% of female applicants. [255]

Women's choices, specifically in terms of their preference for raising a family, were also frequently discussed during interviews as the grounds for women's low participation. This was perceived as both a phenomenon specific to the discipline, as a particularly family unfriendly field, and as a wider pattern in society. The notion that scientific research should or could be compatible with family responsibilities, on the other hand, was absent from interviews. Rather, staff emphasised that to 'make it' in nuclear required sacrifice, which was not gender specific. One staff member cited a very successful European female scientist who headed a national research institute, citing her lack of children as a factor in her success.

> 'I think actually that it's they have different preferences at different times of life.'[256]

> '*in the world* why it's difficult for a women to have a career because of the kids, also what do you want from *your life*, it's different, you prefer to stay with your family even if you want to have a career, but not 15 hours a day, because of your family, because of your interests.'[257]

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[255] ETAN/European Commission (2000) Promoting Excellence Through Mainstreaming Gender Equality: 37 .

[256] Research interview, Spring 2009, Operational Staff Member E.

[257] Research interview, Spring 2009, Horizontal Unit Staff Member A.

> 'The people who are really, who really go to the highest post, they really have to give up something from their personal life[258]

> 'I know, for example, the president of [names organisation] but, well, she didn't go on maternity leave ... she built her carer like this and she's very technically competent so it's ... what this woman chooses as a priority. Because if you have a family [trails off][259].

> Interviewer: 'There is a lot of research about this problem – they call it a leaky pipeline.'
> Interviewee: 'They're all getting married and leaving science altogether to bring up children? I don't know if that's true. Is that the implication of that type of statistic?'

Thus, discussion of women's participation was marked by reference to their mothering potential/responsibilities more than by reference to their competencies as scientists, or industry practices. Questioned whether reconciliation of work and family life had ever featured in employment policy/practice within the field, respondents indicated abruptly that it had not.

Finally, staff also articulated an awareness that women are more anti-nuclear. This assertion was premised on Eurobarometer data and has been incorporated into projects on social barriers to nuclear energy development. In this instance staff's gender knowledge is based upon data.

> '[You've] got different statistics and you know the Eurobarometer with male female and we see sometimes the differences, so this something which is quite obvious.' [260]

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[258] Research interview, Spring 2009, Operational Staff Member E.

[259] Research interview, Spring 2009, Operational Staff Member E.

[260] Research interview Spring 2009, Directorate J, Operational Staff Member E.

> 'I mean this is, comes out of the statistics as well that we've got. So these important aspects that have to be taken into account or borne in mind certainly in the type of research or the impacting of research.'

Women's low participation in nuclear research was therefore widely known within Directorate J. The cause, evidence base, and logic of these perceptions were also initially consistent. Estimates of women's participation rates were all based on personal experience or anecdote, rather than formal data subject to any standards of data collection, interrogation or triangulation. None were based upon or referred to any of the Commission's data, and some resistance was articulated to engaging with these statistics. Interviews were also marked by a tendency to view 'gender issues' in terms of the (natural and binary) differences between men and women.

Women's low participation was consistently attributed first and foremost to women's (natural) lack of interest in the field. Discussion of women was marked by these assumed characteristics of a non-interest in science and an active interest in, or prioritisation of, child rearing. In fact only one description of a scientifically competent woman was supplied during interviews amidst many more generalised discussions. The notion that family responsibilities should be compatible with science was also absent.

This gender knowledge, which views the status quo in terms of the naturally occurring differences between mutually opposite persons, excluded notions of causality and the stereotypically scientific imperative to investigate and/or seek proof, were absent. Consideration of multiple data or cases, group or EU wide patterns, differences between member states, managerial practice, or government policy, were absent, as were longitudinal or hierarchical dimensions of analysis or thinking. Competing explanations and data were greeted with some suspicion – with one respondent greeting the production of monitoring information, with demands for further proof. These perceptions of the sexes, the relations between

them, and the evidence base upon which they are premised can be noted as feeding into perceptions of gender equality policy interventions more generally.

Understanding the Gender Equality Policies

Although there was some diversity in the interpretations of precise GM policy obligations in *Directorate J*, some common conceptions of or gender equality policies more broadly can be noted in interviews. 'Gender issues' within Directorate J gender issues were viewed almost exclusively in terms of women's lack of participation, underpinned by perceptions of the (generalisable) natural qualities of individuals, rather than wider policies or situations exerting causal effects. In addition, staff identified (overt, intentional) discrimination as a theoretical problem.

The perceptions of gender equality policies were also marked by a non-awareness of the wider policy approaches to gender inequality, or of the policy precedents and legal basis for gender equality policy in the EU. One respondent discussed this explicitly, commenting on the lack of legal basis in the European Community 'across the board' and across all areas of DG Research.

> 'Across the board, without distinction between non-nuclear and nuclear, this spend must be the responsibility of the EC treaty, [inaudible] education under DG EAC. This is where these issues need to be dealt with ... Even though there's not very much specific legislation there.'[261]

> 'As to how much we can play a pro-active role, I think depends on the conditions we have in our legal basis'[262]

[261] Research Interview, Spring 2009, Operational Unit staff member N.

[262] Research Interview, Spring 2009, Operational Unit staff member N.

The promotion of gender equality was however rendered a fundamental aim of the EU in the Treaty of Amsterdam (see Chapter 1). The 1996 Communication on the Promotion of Equal Opportunities between Women and Men *enabled* gender mainstreaming in all of the EU's activities, and The 1999 Communication 'Women and Science - Mobilising Women to Enrich European Research' similarly applies, in a non-binding manner, to all parts of DG Research. This individual, nonetheless, expressed the opinion that Directorate J would experience difficulty undertaking gender equality actions, because of a lack of legal basis.

These generalised conceptions of gender issues in terms of individuals and overt discrimination, rather than structural disadvantage or wider data or established policy precedents, sometimes made discussing (in this instance hypothetical) *policy measures* difficult, because questions yielded individualised and defensive responses.

> 'I think I'm not gender biased.'[263]

This kind of response reveals a perspective dominated by notions of discrimination and intentionality, and is grounded the respondent's own individual experience as constitutive of the policy problem/solution.

Staff perceived a menu of policy tools or interventions dominated by quite vague notions of positive discrimination, anxiety about the legitimacy of interventions in natural personal preferences, discrimination against men, and barriers to the application of such measures. Here, assumptions that women and men's interests diverge can be seen constituting the understandings of policy. Staff worried, for example, that catering to the interests or preferences of girls and women would

[263] Research Interview, Spring 2009, Horizontal Unit staff member Z.

necessarily eclipse or exclude the interests of boys and men, whilst proposed solutions which served both sexes or nuclear science were entirely absent.

Viewing gender issues in terms of these perceived sexed characteristics, staff found it difficult to identify beneficial reasons for increasing the participation of women. Some of the potential benefits, which staff hazarded might be yielded by greater participation of women, were based on conceptions of women's *difference* or newness. Women were perceived as bringing different and feminine qualities such as creativity and sensitivity. Another felt it would be more pleasant to have more female colleagues. None of the subjects made any reference to existing technically skilled female nuclear scientists when discussing potential benefits, perhaps on the basis of their underestimation of the numbers of women presently qualifying in the field. One respondent described how boosting women's participation could be beneficial to the nuclear field, if it were to improve its image or legitimacy.

> '[Women could bring] another point of view ... and I mean that with all the stereotypes of a woman ... to have a different point of view. 'I don't know what women can bring? maybe a new creativity a new sensitivity maybe? [264]'
>
> 'It's quite depressing: you walk into a meeting or conference and everybody is grey suit, tie, 55, male.'[265]
>
> 'I would certainly welcome a better gender balance because I think it gives the whole research in this area more credibility.'[266]
>
> 'The other side is whether the actual research that is carried out attracts women as researchers.'

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[264] Research interview, Spring 2009, Horizontal Unit staff member A.

[265] Research interview, Spring 2009, Operational staff member N.

[266] Research interview, Spring 2009, Operational staff member N.

Staff repeatedly perceived the policy issue as one of *attracting* women into the field. Although poor teaching was cited as a one of the reasons for women's low participation in science, actions to encourage women to study science were rejected even though Directorate J was at the time contemplating ways to communicate Nuclear science to a 'younger audience'. This rejection seems premised on a perception that targeting girls could exclude boys, rather than broadening appeal more generally. Anxiety was also expressed about the illegitimacy of intervening in (natural) choices of children and frustration that women/girls simply are not interested.

> 'The school level needs to be improved to encourage teachers and women teachers in particular. I'm sure that would have a much more important impact on the number of girls going into science than anything else.'[267]

> 'We are actively looking at ways of communicating to an earlier, a younger audience, eh, for instance, through things like comics. From that point of view, we might have some way but this wouldn't be gender oriented, it would just be age oriented ... I don't think, I don't think. We would certainly not go into that amount of specific targeting.' [268]

> 'It's not up to the Commission to decide for the people, if you go to school and you decide to be an engineer but you don't like nuclear ... it's up to you! '[269]

> 'Because of the school because of the subject, because it's nuclear so you don't have a lot of women who are interested in it'[270]

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[267] Research interview, Spring 2009, Operational staff member N.

[268] Research interview, Spring 2009, Operational staff member N.

[269] Research Interview, Spring 2009, Horizontal Unit staff member A.

[270] Research Interview, Spring 2009, Horizontal Unit staff member A.

Discussing actions to encourage or retain women further up the professional hierarchy were also rejected on the grounds that such activities are out of Directorate J's remit, unnecessary, unfair and very unusual. Fostering a detailed engagement with what these policies might be was difficult during interviews.

> 'That's down to industry, academia, it's down to a lot of other actors. There's all these issues that are completely out of our remit' [271]

> 'We don't say we need at least x females in the team. We don't do anything like that, I don't think anyone does anything like that.'[272]

> 'They've [nuclear industry] had to modernise in so many areas, because they were probably at fault regarding communication, regarding secrecy, regarding ... And I think they have made a huge improvement in many areas and I would expect that gender issues were brought along in a similar way in this modernising process.'[273]

> 'There's no positive discrimination. That isn't possible, that wouldn't be fair.'[274]

Actions to encourage women's participation, recommended in DG Research's wider literature, such as prizes or fellowships for women were thus not considered. This is interesting in light of the established practice of specifically setting aside funds to boost new member states participation, after statistics showed that their success rates in applications were low, and is surprising in view of the ERA aim to maximise the use of all human resources. No member of staff expressed anxiety that the encouragement of researchers in new member states was unfair.

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[271] Research Interview, Spring 2009, Operational Unit staff member N.

[272] Research Interview, Spring 2009, Operational Unit staff member N.

[273] Research Interview, Spring 2009, Operational Unit staff member N.

[274] Research Interview, Spring 2009, Operational Unit staff member N.

Other policy measures, such as discrimination proofing exercises for post-doc applications, were also not considered, although monitoring data from DG Research suggests that such a move might be warranted. Indeed the suggestion that Directorate J could reflect on its own practices was explicitly rejected with assertions that Directorate J was 'open to gender issues', and accompanied by assertions that there 'is no problem', and that Directorate J should not be proactive.

> 'There is no gender issue at the end. The project is open to everybody, if there are women they are more than welcome, but I mean its for everybody?'[275]
>
> 'Anything proactive? No.'[276]
>
> 'It certainly needs the other much bigger framework programme to take the lead role and for us to, then, apply the same.'[277]

Analysing the gender knowledge of staff in Directorate J thus provides an interesting insight into the perceptions upon which staff can – or cannot- draw in order to synthesis an understanding of GM. Staff cannot draw on awareness of different policy interventions which might provide competing perspectives on the gender equality problem, examples of change, or strong normative assertions that gender equality interventions are legitimate.

Perceptions are based on personal anecdote, experience and opinion. They do not draw on population or discipline wide data, comparative, longitudinal or statistical analysis, and they do not include *any* reference to factors which may *shape* men or women's lives. Instead, perceptions include strong assertions of important and durable differences in the characteristics and competencies of the sexes, such as

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[275] Research Interview, Spring 2009, Horizontal Unit staff member A.

[276] Research Interview, Spring 2009, Horizontal Unit staff member A.

[277] Research Interview, Spring 2009, Operational Unit staff member N.

women's dislike of 'the technical' and their preference for child-rearing or family responsibilities. Structural notions of gender inequality are markedly absent within Directorate J.

Conceptualising GM in Directorate J

GM has not, therefore, resulted in significant systemic change in Directorate J. Whereas the previous case study enabled us to observe and theorise change, this case study enables us to observe the dynamics constituting non-change, and thus to begin theorising mechanisms of resistance. Results serve to highlight the knowledge processes which GM entails, namely the insertion and mobilisation of new, challenging perceptions of gender and gender inequality, based on new ways of thinking and perceiving, developed within the feminist and academic community. Findings in Directorate J the illustrate wider processes leading staff in Directorate J to collectively assume gender is irrelevant to *their* work and illustrate how the demand to mainstream gender into Directorate J's work seems *unintelligibl*e or even, at worst, absurd.

Two dynamics here are key: the habitualised exclusion of all 'non-technical' perspectives or issues and the resulting unwillingness to engage with the policy agenda (along with many other 'cross cutting issues'); and lack of endogenous gender knowledge which helps to make 'mainstreaming a gender perspective' appear remotely intelligible or beneficial.

GM based on Gender Knowledge in Directorate J

To fully understand the perspective of SPOs working within Directorate J it is helpful to reconstruct an understanding of what GM might entail, based on the

existing policy perspective and practices in Directorate J, and the gender knowledge articulated in interviews. These interpretations are, of course, the creation of the researcher. As detailed in previous sections, interviewees struggled to imagine what GM might entail. Their presentation is however helpful to empathise with respondents.

Based on existing perceptions of women, gender issues and gender equality policies more generally, GM in Directorate J might include incorporating social issues into Directorate J's research programme, engaging with (and thus to a degree) legitimising public opposition and thus weakening its own position. Alternatively, it might entail interpreting the development of the nuclear industry more widely, encouraging the development of alternative applications of nuclear technology. This conflicts with the aims of Directorate J's research public comprised almost exclusively of industrial nuclear energy providers (see below).

We can also consider the other 'prong' of GM policy commonly understood within Directorate J, that of encouraging women's participation. This might entail (vain) attempts to encourage naturally creative, feminine, communicative, pleasant, child-orientated anti-nuclear and technically-averse people into a technical nuclear workforce which demands long hours and unpalatable sacrifices.

Perceptions of women, which are popularly shared in Directorate J, are thus the *antithesis* of good nuclear scientists who are technically focused and prepared to make sacrifices. Incorporating them into the workforce thus works against the nuclear industry and Directorate J's interests. Similarly GM might entail creating school materials aimed at encouraging feminine children into science, whilst

repelling masculine ones, or awarding prizes to encourage female scientists who will then leave the industry to get married and have children, and so forth. Whilst these suggestions may seem facetious, material from interviews indicates that this is an empathetic representation of the incomprehension and occasional impatience or hostility which staff in Directorate J feel when asked to engage with GM or comment on gender inequality. The theoretical approach elaborated in this project, helps us to unpick the processes leading to the dominance of *this* gender knowledge.

Interpretation and Stabilisation in Directorate J

Here, it is useful to highlight the clear distinction which can be drawn between the knowledge practices which characterise Directorate J's implementation methods and those of Directorate E discussed in the previous chapter. Directorate E's policy agenda is flexible and interdisciplinary, creating a working environment which requires SPOs to synthesise strategic and disciplinary aims. It mobilises in a comparatively diverse research community and necessitates the simultaneous comprehension of conflicting policy agendas, negotiation between them and, at times, compromise. Directorate E's response to the food crises in the 1990s also created an imperative to serve society and a willingness to push industry, where necessary, to alter its practices.

Directorate E's policy processes thus mobilise and encompass multiple different perspectives. It is responsive to change and coordinates action around competing research agendas, sometimes even within the work of one SPO or one project. This established acceptance of competing research aims, and experience in synthesising them and devising appropriate actions, in conjunction with a willingness to engage with GM within Directorate E's hierarchy, comprised enabling conditions for an engagement with GM. GM subsequently required recourse to knowledge drawn

from *outside* Directorate E and the processes of synthesis and translation described by Directorate E Horizontal Unit staff in the previous chapter.

Directorate J, on the other hand, presides over a stable policy remit. Its identity is premised upon its specificity and it mobilises a homogenous research public. Its policy processes *actively exclude* competing view points or 'non-technical' information or expertise, bounding related issues out of its remit. One phenomenon which leads to this practice is the narrower research remit of Directorate E coupled with the social opposition this specific remit provokes. Staff in Directorate J were also keen to argue that this remit is restrictively established in the Euratom Treaty.

However, wider IPA perspectives argue that abstract policy commitments are always interpreted on the ground and findings in Chapter Four and Five illustrate how the interpretation of strategies can shift and widen over time, as new layers and policy imperatives are added into the agenda within DGR. Competitiveness has not, for example, been interpreted as a focus on promoting the most elite researchers in Europe – rather the recent ERA imperative seeks to foster the maximum development of all human resources in the EU. Long term projects which support unprofitable technologies in the hope of future investment or to support SMEs can also be noted as enjoying funding, potentially at the expense of short term competitiveness.

Furthermore, data show that GM obligations have been mobilised throughout DG Research through several layers of documents and persons, which pertain to the whole of DG Research. Abstract commitments to GM, articulating a normative commitment to gender equality and based upon a structural conception of gender

inequality, are rooted in existing EU Treaties and the 1996 Communication on Mainstreaming Equal Opportunities. These provide a sound legal basis for GM actions in all areas and are contained in the text of both the Frameworks. The 1999 Communication of Women in Science, the Working Paper, and stipulations on 'new instruments' NoEs and IPs also prescribe GM activities across the board. These policies exert the same force upon all Directorates in DG Research. As a result, Directorate J found GAPs embedded into its implementation procedures in the same way all other Directorates did. The results of GM in Directorate J are therefore the product not of a restrictive legal basis or an exemption from GM, but of the habitualised policy practices in Directorate J which are themselves linked to the policy situation it perceives itself within and the research public it mobilises.

Existing Knowledge Processes in Directorate J: excluding challenges

Firstly, commitment to the development of the *nuclear* industry is established in Directorate J's remit[278]. With the pursuit of (long term) nuclear development thus stabilised as an aim, Directorate J does not engage with wider debates about the utility, scope and legitimacy of nuclear power. Rather, with the imperative of supporting *nuclear development* pre-established, it diverts its full resources to support

[278] Whereas the disciplinary focus of Directorate E has and is likely to continue to change over time. Interestingly, the disciplinary focus of Directorate J has changed since this project was undertaken, now encompassing Energy as a whole.

the *technical* development of the nuclear industry, actively excluding and externalising perspectives which do or could, challenge its *rasion de'etre* - the development of the nuclear industry.

Directorate J thus mobilises a very narrow public and is motivated to maintain a strict boundary between the technical issues which could benefit it, and the social challenges which, interviewees acknowledge, are a major barrier to the industry. In the absence of any imperative to foster compromise or any internal conflicts in its agenda, Directorate J devolves policy interpretation to industry. This is evidenced by the practices of empowering technology platforms to produce documents which will be reproduced in the Work Programme or through the wording of research topics which empower industry to fulfil its own needs. In contrast to Directorate E therefore, Directorate J does not lead or challenge industry; it seeks to shield it from criticism and to provide resources to support its development.

This research public, comprised of public/private industry, which works with policy makers in each member state, is similarly motivated to maintain a focus on technical issues to the exclusion of engagement with wider political or social opposition. Interviews also indicated that equal opportunities or work life balance policies are not active agendas within the nuclear industry and that it presides over a work force comprised almost exclusively of an ageing male workforce. A normative assumption that scientists 'have to make sacrifices to make it' also dominates.

Competing discourses originating in equal opportunities practices, or perspectives from technically competent and committed female personnel which challenge the 'sacrifice' discourse are therefore largely absent within this research public.

This results in two phenomena which hinder the adoption of GM. Firstly, Directorate J presides over a research public and a staff with little knowledge of wider socio-economic perspectives on scientific research and dominant assumptions that such perspectives should be interpreted out and or ignored in order to achieve the best outcomes for the nuclear industry. Secondly, many concepts which might help to make GM intelligible, are lacking. Instead, gender knowledge which makes the absence of women seem natural and acceptable, and which GM theoretically might displace, dominate *unchallenged*.

This gender knowledge, which dominates this field, is thus largely intuitive, unreflective and vague. Staff frequently described 'not knowing' how many women were present and not knowing why, in conjunction with estimates based on the first hand experience of industry and SPOs – neither SPOs nor industry representative are likely to have seen large numbers of technically competent women working or studying in their field. Based on this gender knowledge, asking SPOs or industry to engage with new perspectives on gender equality however, would require Directorate J staff to overcome habitualised resistance to engagement with 'non-technical' issues, with no realistic prospect of benefit.

Displacing this gender knowledge thus also entails pushing self perceived 'technical' staff to engage with 'social' issues which they hold in lower esteem and perceive as non-scientific. Alternatively, knowledgeable personnel, with insider knowledge of the nuclear industry, SPOs work and GM, might be able to synthesise an intelligible explanation and course of action for application in Directorate J.

In this instance, however, the member of staff assigned responsibility for GM by the Horizontal Unit, lacked these resources. Instead Directorate J mobilised resources to exclude GM, interpreting it on the basis of its existing knowledge practices and gender knowledge. This outcome is not therefore a passive nor an inevitable outcome. Neither, however, is it a wholly intentional one; it emerged from wider collective knowledge practices and processes within Directorate J.

7

Chapter Seven Conclusions

Gender Mainstreaming as Research Opportunity: Operationalising Gender and Understanding Change

Chapter One set the context for this research project. In it I argued that recent developments in feminist theory have conceptualised gender as a process (Beckwith 2005) or a practice, (Acker 1992, West and Zimmerman 1987) where meaning is attributed to persons and activities. Through these processes, masculinity and femininity, roles, status and privilege are constantly renegotiated and redefined through interactions (Connell 2002, Scott 1986). Applying these theories to the state, FPA (feminist policy analysis), FOS (feminist organisational sociology) and FPS (feminist political science) scholars have documented how these meanings are produced and enforced, within and through the state, thus identifying it as a powerful mechanism in the institutionalisation and regulation of gender (Bacchi and Eveline 2010:40, Connnell 1990:529, Sauer 2005, Woehl 2011).

Detailing findings in these fields, I highlighted three important interlinking dynamics which have been identified in this body of research. Firstly, the state impacts on wider society through gender blind and gender biased policies (Fraser 1989, Hawkesworth 1994, Lovenduski 1986). Secondly, gendered norms and images normalise the exclusion of women's political interests and de-politicise and hide gender inequality (Chappell 2002, Mackay et al 2010, Stivers 1993). Thirdly, practices in its organisations define women's roles and limit their influence and

power within it (Annesley and Gains 2010, Kathlene 1995, Lovenduski and Norris 1989).

I argued however that although these theoretical developments provide a nuanced perspective on the multiple dynamics through which the state produces inequality, they have proved difficult to operationalise in empirical research (Lovenduski 1998, 2005, Mackay 2004). In turn, this has made the investigation of mechanisms perpetuating them difficult, limiting our understanding of change and how it could be achieved.

Linking this to GM I argued that these shortcomings can be observed in most existing analyses of the policy. Many scholars of GM have adopted a macro perspective on GM, examining policy uptake (True and Mintorm 2001), strategic policy content (Daly 2005, Lombardo 2005) or highlighting shortcomings in the policy's implementation, where rhetorical commitments were watered down or re-interpreted (Bretherton 2001, Daly 2005). The findings of these investigations provide a foundation for further research, highlighting diversity in GM policy content and patchy implementation of rhetorical commitments. They do not however, engage with our existing understanding of gender and gendering as constantly renegotiated processes. On this basis I argued that analysis of GM ought to investigate how GM disrupts, or could disrupt, the processes detailed in existing feminist theory, through which the state produces gender inequality. Thus conceived, I argued that GM implementation provides a hitherto unexploited opportunity, to deepen our understanding of the dynamics maintaining the various ways in which the state produces gender inequality and potential routes to change.

I then drew points from existing research on GM which might supply a useful starting place for such an investigation. These analyses shared the common theme of investigating policy construction. MAGEEQ for example examined how the gender inequality issue was conceptualised in (mainstream) policies, subsequent to the adoption of GM, specifically focusing on whether structural definitions of gender inequality, which are so central in the original formulation of GM, were present in state policies (Verloo 2007). Referring back to broader existing findings I argued for two developments in this kind of approach: an examination of how *these* policy formulations became dominant (as opposed to any other); and investigation of the slippage between strong rhetorical commitments and actual implementation, which has been so extensively documented in practical examinations of GM.

I then examined research which has looked at implementation in close detail, to ask whether it provided insights into the dynamics hobbling the movement of GM to implementation. These results pointed to structural constraints on changes to local perceptions of the gender equality policy problem, highlighting in particular, problems of unintelligibility and incomprehension (Acker 2000, Andresen and Doelling 2005, Benschop and Verloo 2006, Bilton 2005, Connell 2006, Eryl and Meyerson 2000). Several very interesting ancillary points could also be observed in this literature. These included: explicit institutional acceptance of a non-engagement with or ignorance of women's policy needs (Schmidt 2001: 176,211,221); fundamental conflict between 'gendered ways of knowing' and the usual mainstream perceptions of policy issues (Bilton 2005:218); shared ways of perceiving policy issues which obscured gender inequality from view (Andresen and Doelling 2005, Connell 2000); and self-censorship amongst GM advocates or staff who might perceive problems or hold complaints, when their views clashed with the prevailing organisational view (Benschop and Verloo 2006, Doelling 2005, Schofield and Goodwin 2006).

These observations have stimulated scholars to argue that GM appears to be held back by the genderedness of organisations (Benschop and Verloo 2006) which it in theory seeks to displace, and that existing methods may not be capturing these dynamics when GM is adopted and implemented (Benschop and Verloo 2660:31, Meier 2006:185, Sauer 2005:86).

Responding to this agenda I argued that a more developed concept of policy could ameliorate some of these problems. Many studies of GM 'failure' implicitly view policy as a definable idea, that can be expected to travel mimetically between states and organisations and which is usually implemented in accordance with the formulators' original intentions. This assumption is not replicated in other fields of policy analysis however (e.g. Pressman and Wildavsky 1973, Sabatier 1986, Sabatier and Mazmanian 2008), and I argued that it limits our findings to assessments of failure, rather than enabling us to engage with the processes constituting (disappointing) outcomes.

Re-conceptualising Policy

Policy as a Process

Chapter Two thus reviewed existing approaches to policy analysis in mainstream literature and presented a more developed concept of policy. This summary drew a broad distinction between investigations of policy's efficacy based on positivist or rationalistic assumptions, and analysis of policy as *processes*. I argued that we should draw on the latter field to examine GM and presented two foundational arguments put forward in this literature, which are particularly apposite to the existing results of GM implementation.

Firstly, these approaches criticised the rationalistic analysis of policy's efficacy, arguing that it fails to address a central phenomenon – contestation over the definition of problems. An extensive body of literature in this field has shown how policies nominally tackling the same issue might diverge considerably in terms of the actions or instruments prescribed and the desired outcomes. These analysts have subsequently examined the processes of contestation around the definition of policy content in detail, using concepts such as policy frames, as used in the MAGEEQ project (Benford and Snow 2000, Rein and Schoen 1993, Verloo 2007).

These scholars have also argued however, that the relevance of problem definition extends into implementation and that 'slippage' or re-interpretation is almost inevitable when policy is put into action. Two grounds for this are identified in this literature. Strategic or rhetorical policy is often vague or contradictory, on account of the processes of contestation and compromise which are often involved in political negotiations (Hill 2005:180). This leaves implementers considerable scope for interpretation. In addition, whilst written policies articulate problems and action in a discreet manner, policies are always *implemented* in interaction with existing factors such as competing aims, existing processes, restrictions and/or expertise (Freeman 2006, Friedman 2008). Implementing organisations therefore always have their own perspectives containing logics of decision making, values, criteria of effectiveness and so forth (Newman 2008, Lendvai and Stubbs), which affect how policy will be put into action.

Adopting these perspectives I argued that GM policy must not simply be considered as a top-down undertaking. Rather, we should conceive of it as an evolutionary process where attempts are made to translate abstract policy aims into new contexts (Freeman 2006), and to coordinate action around particular perceptions of policy problems (Colebatch 2009). Here, competing perspectives and pre-existing practices all interplay within an implementing organisation to shape what activity is really undertaken, or what notion of the problem is acted upon

(Newman 2008, Newman and Clarke 2008, Pressman and Wildavsky 1979). Thus conceived, policy is far from an abstracted idea on paper or a rational linear activity: we should rather understand it as process and action, in constant negotiation.

This notion of policy as contestation and negotiation, neatly replicates our existing notion of gender as a fluid and constantly renegotiated phenomena. It also enables us to articulate existing gender theoretical insights that both state policy and practices within it, are gendered and gender*ing*, and to theorise the link between the two, by collapsing the boundary between them into an understanding of policy as a constantly renegotiated practice.

Applying these perspectives to an analysis of GM therefore entailed eschewing macro level analysis of policy construction and restructuring our perspective around several themes. I argued that we can instead ask what local construction of GM is being 'pushed' in strategic policy; how these commitments are moved into implementation, or how attempts are made to coordinate action around these; and what 'ways of doing things' simultaneously provide the context for GM and constitute its target. Similarly, this concept of policy enables a perspective on how pre-existing policies coordinate action around gender-biased or gender blind perceptions of the policy problem at hand.

Policy in Action

Building on this reformulation, I developed an analytical framework which provides two angles of analysis: how policy is understood 'on the ground' *and* the processes within an organisation which influence and shape these perspectives.

Nested within this approach I used the concept of gender knowledge to hone in on explicit and implicit constructions of gender.

Firstly, I introduced interpretive policy analysis (IPA) which has used the concept of *knowledge* to analyse policy in action. Reviewing Yanow (1993, 2000) I showed how her analysis gathered data from documents, artefacts and interviews to garner an empathetic understanding of policy, as it is understood by persons participating in and affected by it. This kind of analysis enables a depiction of policy not *simply* as it is written, but rather as it known locally and as it is undertaken, in terms closely linked to action. In effect, it enables analysis of policy construction within the realm of implementation.

I also demonstrated how IPA can take this analysis of construction in implementation even further, to show how particular local understandings come about (Johnstone 2005, Laws and Rein 2003, Wagenaar 2004). This research has identified and discussed institutionally favoured ways of knowing within organisations. Here I presented Johnstone's (2005) case study which illustrated how policy participants interpreted problems and situations through a legal lens, whilst Laws and Rein (2003) showed how local bureaucrats rejected information which was not expressed in a scientific format or parlance.

In addition to identifying these dynamics, these case studies also discussed the political impact which these ways of knowing exert. Thus Wagenaar's case study showed how an attachment to 'scientific' data can lead to the systematic rejection of particular perspectives or policy contributions from particular persons, so that for example, lay persons may find their perspectives being ignored if they cannot

express themselves in scientific terminology. Johnstone (2005) on the other hand showed how ways of knowing can layer additional interests into policy problems. In his case study, the need to maintain coherent legal precedents heavily affected negotiations nominally concerned with military intervention in one state. Similarly, Wagenaar's (2004) analysis of institutional rules and practices showed how implementers may have to act upon policies within a heavily structured or restrictive environment, so that the original aims or logic of a policy play almost no role in their reasoning or activity.

I argued therefore that these perspectives, which identify the impact of existing ways of knowing, the assumptions they contain and the information rejection they can entail, can be related to existing findings on GM implementation such as: that women's policy needs are often unknown (Schmidt 2001); that GM advocates find their perspective clashing with the dominant ways of knowing and being rendered un workable as a result (Bilton 2005); or that implementers articulate support for gender equality, but argue its irrelevance *here* (Connell 2006).

Whilst this body of IPA provided an underlying rational for this kind of analysis and a loose template for method, it did not provide tools to investigate how ways of knowing are themselves institutionalised and it does not provide a framework to examine gender. Further theoretical development to capture the fine-grained processes maintaining gendered meanings and coordinating action around them remained necessary. To tackle these problems I used the concept of gender knowledge and drew on science and technology studies/the sociology of knowledge (STS/SK) literatures which have investigated the micro-processes and power dynamics which render some knowledges and ways of knowing dominant, and others marginal.

Theorizing Knowledge Processes and Gender Knowledge

Here I introduced *gender knowledge* (Andresen and Doelling 2005, Caglar 2008, Cavaghan 2010, Cavaghan 2012), a concept which has been used in a handful of existing policy analyses. I explained how it provides a framework to analyse how people perceive the sexes and understand gender relations, whether these take the form of explicit commentary or implicit assumptions and beliefs, or action. Reviewing how Andresen and Doelling had used the concept, I argued that a more sophisticated concept of knowledge, drawing on STS/SK approaches would be better suited to the kind of analysis I have argued for. Here, I argued that its application could be improved by a deeper exploration of the ways of seeing ('rationale and evidence') which underpin gender knowledge, in tandem with a focus on the mechanisms through which they dominate in an organisation. This would enable us to explore this coexistence of commitment to abstract notions of gender equality and the persistence of gendered/gendering practices which has so consistently been identified in GM implementation studies (Benschop and Verloo 2006, Doelling 2005, Connel 2006).

This thesis therefore argued that analyses should make a sharper distinction between the methods of thinking constituting gender blindness, that is, the mechanisms through which gender is rendered irrelevant or implicit; and gender bias, the gendered meanings which disadvantage or marginalise women. I argued that this focus on gender blindness can be achieved by concentrating on what kinds of information and thinking compose and underpin these perceptions. To explore how these dominate I turned to existing concepts in STS/SK, reviewing the foundational assumptions of STS/SK approaches (including Actor Network Theory, ANT) and showing how they have been applied to study the coordination of action in organisations.

These STS/SK perspectives explicitly conceive of any given instance of knowledge as a mere representation or interpretation, the product of some method of thinking or seeing which assigns meaning to phenomena and therefore one of an infinite number of other potential interpretations (Callon, Law and Rip 1986, Haas 1992, Latour 2005, Law 2003). They therefore heavily emphasise that knowledge is the product of some method of thinking or seeing which assigns a meaning to phenomena (Law 2003:2). In addition they highlight how the dominance of any knowledge (or knowledges) necessarily entails the displacement, exclusion, or suppression of competing representations (Gebhardt 1987 in Lendvai and Stubbs 2006:5). On this basis, the field has developed perspectives both to analyse knowledge content and the ways of thinking or seeing it is based upon, *and* the processes leading to its dominance or marginalisation.

Applying this perspective to organisations, ANT scholars have in turn used these insights to theorise how action is coordinated around particular conceptions of issues, at the expense of others. I thus developed a menu of research tools drawing on this literature, which aimed to reveal the processes institutionalising ways of seeing or thinking that make the perception of gender inequality difficult or impossible in an organisation, i.e. those that constitute gender blindness, and through which activity is coordinated around gender blind or gender biased policy agendas.

One of the first conceptual tools I highlighted here was *boundary work* (Gottweis 1998, Leigh Star and Greisemer 1989, Caglar 2008) a concept which describes the practices of assigning relevance and irrelevance to aspects of an issue. Secondly, I presented studies which have shown how *materials* (widely interpreted, including

graphs, databases and so forth) and *associations* can be used to *mobilise* the same interpretation of an issue, effectively drowning out competing representations which enjoy less access to resources (Callon and Latour 1981, Latour 2005, Law 2003). These authors argue that a degree of *stability* in the local perception of problems, issues and action can be achieved through the continual deployment of materials, and persons, representing the same interpretation of a problem within an organisation. If successful, these processes can reduce confusion and contestation within an organisation, replacing instead by shared assumed aims. 'A set of practices is placed in a hierarchy in such a way that some issues become stable and need no longer be considered' (Latour 1981: 285, see also Lachenmann 1994).

These processes thus create favourable conditions for some perspectives, interests and actors, whilst marginalising others. Actors whose preferred views are reliably and recursively represented and acted upon within an institution, do not need to expend significant energy or resources arguing their case, or refuting others, with the same intensity as their opponents (Callon and Latour 1981: 285, Latour 1986, Rip 1986). Indeed some issues, for example gender inequality, might be *actively* rendered 'a matter of indifference' (Latour 1981: 285). STS/SK thus illustrates the power dynamics involved in knowing and the coordination of action around any given knowledge, within an organisation. Indeed, this ordering, resting on the simplification of problems, the exclusion of competing views and the ability to harness action around one agenda, forms an explanation of power and stability within organisations in ANT approaches (Callon 1999, Callon and Latour 1981, Law 1986, 2003, Latour 2005, Lendvai and Stubbs 2006).

I thus argued for an analysis of gender knowledge which emphasises the material form it takes and rationale and evidence, defining it as *explicit and implicit representations concerning the differences between the sexes and the relations between them, the origins and normative significance of these, the rationale and evidence underpinning*

them and their material form. This definition thus draws heavily on a material conceptualisation of knowledge elaborated in the STS/SK literatures reviewed and conceives of it as a collective and context-dependent outcome. It does not describe an abstract collective notion of 'different kinds of collective knowledge' which splits content off from the material form it takes, or the context within which it exists.

A New Perspective on GM Implementation

This thesis thus formulated and applied a new perspective on GM implementation drawing on policy studies, particularly Interpretive Policy Analysis (IPA) (Colebatch 2009, Pressman and Wildavsky 1984, Yanow 1993, 2008) and STS/SK (Latour and Callon 1981, Law 1986, 2003, Sinclair 2000, Latour 2005, Lendvai and Stubbs 2006). These approaches provide several very helpful perspectives on policy and policy implementation. Firstly, they articulate a framework to re-formulate our understanding of policy as the attempt to coordinate action around a specified agenda (Colebatch 2009). Secondly, they help us understand all policy, from rhetorical formulation to implementation, as an evolutionary process of contestation and negotiation, where actors compete to influence and coordinate action, according to their own preferred perception of a policy issue (Brown and Wildavsky 1987, Newman 2008, Newman and Clarke 2008, Pressman and Wildavsky 1979, Sabatier 1986). Thirdly, they have highlighted how policy is always interpreted through pre-existing practices (Freeman 2006, Schoen 1973:101, Heclo 1974) in a collective process and, how competing perspectives can be marginalised. These perspectives thus present policy itself as a process of negotiation and contestation in a manner similar to our existing conceptions of gender s a process of negotiation (Acker 1990, Beckwith 2005, Chappell 2000, Connel 1987, 2002, Duerst Lhti and Kelly 1995, Harding 1986, West and Zimmerman 1987).

Joining these perspectives with STS/SK approaches and the concepts of boundary work, mobilisation, stabilisation, materials and associations, we can analyse GM as the attempt to coordinate action around a new policy problem – gender inequality. This analysis enabled the investigation of how the GM policy has been mobilised and the gender knowledge that it entails, that is how it represents the issue in terms of content, form, rational and evidence. We can also capture the established ways of thinking (or not thinking) about gender which dominate in an institution, and how *they* are institutionalised. This significantly develops our perspective on GM implementation beyond existing macro level studies of GM, and engages with the processes through which collective gender blindness is stabilised and can be challenged in governing organisations.

Empirical Results

Excluding Issues, Restricting Interpretation and Coordinating Action

In the broadest terms, empirical data in this thesis been structured around two analytical perspectives: the processes through which the perception of issues is coordinated and acted upon accordingly, with regard to both GM and mainstream policy; and an analysis through the eyes of staff to show how they understand their work and the relevance of gender within it.

Chapter Four tackled the first theme providing an overview of the pre-existing processes, which structure work and policy in DG Research and examining what activity was undertaken to coordinate action around the GM agenda. This provided an empirical depiction of the generic policy dynamics of translation which IPA approaches argue is so central – namely the local translation or interpretation of abstract policy aims into workable actions. It also identified several dynamics

which stabilise shared perceptions of policy problems and which exert a constraint on the articulation of competing policy perspectives.

Firstly, I illustrated how a hierarchy of policy texts manages and documents the collective translation of abstract policy aims into workable action in DG Research. Reviewing the processes involved in the creation of these documents, I showed how their content moved from generalised fundamental aims into increasing operational detail and emphasised how the same actors were repeatedly represented in negotiations at each of these stages. I argued that the separation of these processes into discrete stages, functioned to reduce the scope for both internal and external policy participants to influence the policy agenda. Any actor wishing to heavily influence policy faces several stages of negotiation to do so and must try to change policy content in several documentary locations.

In addition, the hierarchical nature of these policy defining processes exerts a further constraint upon policy participants: at each stage of policy negotiation, contributions are admissible only within the definitions established in the preceding stage. Thus, at the highest or most abstract level of policy, foundational and vague aims, and any clear constraints are pre-established – such as for example the enhancement of competitiveness or the restriction to particular policy tools. In strategic policy, renegotiated every 4-7 years in this instance, strategy towards these ends is defined. The Work Programme subsequently represents the translation of this strategy into actions, which are then performed by SPOs during the administration of projects according to pre-established procedures. In turn, policy evaluation and monitoring processes generate assessments of success or failure according to these pre-defined aims, creating a representation which is fed back into policy negotiation. These processes thus create a self-reinforcing dynamic whereby

the same agendas are excluded and the same notion of the problem is recursively re-emphasised within and outwith DG Research. Scientists respond to the same agenda, undertaking scientific projects which respond within it; 'non-competitive' agendas are excluded; and DG Research measures its own success and that of scientists' through structured impact assessment procedures which assess achievement on the basis of predefined aims.

These processes thus structure which interpretations of the science agenda are workable or relevant in, and in relation to, DG Research. S*ome* perspectives fit easily with this agenda and 'make sense', whilst others might have to be argued more forcefully, compromise with other aims or are excluded completely. They also structure which agenda staff and scientist's *action* serves. Scientists find themselves responding to the competitiveness agenda or working on EU wide consortia-led projects, not because they explicitly share an interest in competitiveness or a belief that EU wide consortia are an effective way to work, but because DG Research instrumentalises their action around this agenda. Similarly, SPOs administrate projects which respond to these agendas not because they personally hold these views but because DG Research creates policy processes which instrumentalise their action around this agenda.

Establishing GM: Translating Abstract Commitments into Workable Actions

This outlook throws a useful perspective onto the coordination of action around the gender equality issue in DG Research, by showing the explicit stages of policy elaboration that are required. Analysis showed how prior to Framework 6, gender inequality within science was an excluded agenda. Gender equality concerns were all but absent in DG Research's suite of policy documents and actions, present only in the form of a rhetorical commitment to 'encourage the participation of women in

the field of research and technological development'. No elaboration of what this might entail existed, however. No formal actions drew resources around the issue, no procedures acted upon it and no data was collected to measure the status quo, nor assess success or failure on policy aims, and interviews with staff revealed an institutionalised ignorance of what gender equality issues *might* entail.

This analysis of DG Research's processes therefore demonstrated that the extensive work and participation involved in translating any abstract policy aim into a workable and collectively perceived policy agenda, was absent in the case of gender equality commitments. During Framework 5 these had remained rhetorical only. The work of translating commitments to act on gender equality into *actions,* so closely stipulated in DG Research's wider mainstream policy, was absent. In this light we can see the Gender Unit's actions as an active process of translating abstract aims into a locally meaningful understanding of the relevance of gender inequality to DG Research's work and agenda. To do so it drew on existing external knowledge concerning gender equality policy and articulated it with endogenous knowledge of policy processes and activities in DG Research. This process was extremely resource intensive and included several dynamics and stages of knowledge production.

The impetus for this new recognition and conceptualisation of a problem, stemmed from the publication of the *Nature* article and the MIT *Report on the Status of Women Faculty*. These challenged the previous collective non-engagement with the topic, by providing data to the contrary. One of the Gender Unit's first steps in engaging with the new gender inequality agenda was to thus use the Commission's resources (persons, contacts, funds) to compile its own body of evidence, which examined

women's career trajectories in science in the EU and DG Research. Previously, the Commission and Member States had not collected this kind of data.

The subsequent publications which this data yielded, represented a wholesale challenge to existing gender knowledge, describing a problem in-depth which was based on a wholly different way of thinking about the issue, and which was premised on a fairly complex notion of equality. It evidenced occupational inequality in a stereotypically 'scientific' manner, it investigated causes and it suggested ameliorative action. It investigated whether women benefited from and participated in science on equal terms, and it used large scale data sets and longitudinal analysis. The deployment and promotion of this new manner of thinking about gender equality was persistently identified by staff as a key stage in the erosion of inaction on the agenda.

Drawing experts involved in the data production, experienced gender equality policy practitioners from other parts of the EU Commission and its own staff, the Gender Unit subsequently produced a developed elaboration of *a policy problem*, which spanned the whole of DG Research's policy process, ensuring the insertion of these commitments into each stage of the policy process, in an appropriate form. Thus commitments to gender equality were normatively rooted not in abstract commitments to gender equality but *in the EU Treaties*. Strategic commitment to gender equality was explicitly defined as *science* 'by, for and on' women, thus rendering a notion of what gender equality in science might entail, explicit. In turn the Gender Unit elaborated explicit procedures to coordinate action around this formulation. These prescribed quotas at multiple stages in DG Research's decision making procedures and described moments in the policy formulation process where women's needs, or a gender perspective, should be incorporated into research.

Prescriptive procedures in implementation and administration procedures were also elaborated: GAPs and monitoring and impact procedures created structured moments during SPOs work where they were explicitly asked to act upon the policy agenda.

This activity thus created a locally intelligible strategic policy agenda out of rhetorical commitments to gender equality. The Gender Unit also established two associations of persons to represent these agendas during policy implementation. The Helsinki Group exerts pressure at the strategic stage of policy negotiation and has helped to ensure the collection of member state data, whilst the Women in Science Group secures representation within implementing Directorates and helps to maintain pressure on other SPOs to collect data and implement GAPs.

The translation of rhetorical commitments to gender equality, into a relevant policy problem described in all stages of policy in DG Research has thus constituted an important stage in the implementation of GM in DG Research and several resources have been deployed in this process. These have included new and externally generated perspectives on gender inequality, internal knowledge of the practices and policies of DG Research and political backing in the Parliament and the Commission. GM has thus not only involved the elaboration of new policy prescriptions, it has also involved the creation of a new material, formalised knowledge base, an apparatus to represent the gender equality problems in science throughout the policy process *and* related efforts to coordinate action around a new recognition and conceptualization of a gender inequality problem in science.

This investigation of GM as a knowledge process therefore provides an analysis of GM implementation which shows one of the key processes that 'successful' implementation entails: GM commitments must be translated into local repertoires and effectively mobilised. This case study illustrates an example of how this can be accomplished and what it entails; how policy processes stabilise an agenda and coordinate action; and how these processes function to marginalise and obscure competing agendas. This analysis also therefore illuminates a significant barrier to GM implementation - where no new resources or personnel are deployed to undertake this process of translation and mobilization, and where materials and persons are not deployed to represent a newly elaborated agenda, GM is unlikely to result in significant change.

Directorate Case Studies

Where Chapter Four explored the more top down attempts to coordinate action around the gender equality agenda, Chapters Five and Six examined policy 'on the ground'. Analysis in each case study explored three themes: local work and interpretations of DG Research policy; activities coordinating action around a local interpretation of GM policy; and how staff actually understood the relevance of gender in science and research. These case studies showed how staff make sense of their local policy agenda in terms of the practices which compose their day to day work. Staff in neither Directorate J nor Directorate E, spoke in abstract terms of science policy, rather they described the processes and practices involved in the administration of their fields' agenda.

Local Interpretations of Policy and Pre-existing Practices

These implementation practices did not only encompass the administration of policy tools. The collective processes of translating abstract aims into locally

relevant actions detailed in Chapter Four, continue during implementation. Comparison between the two case studies showed however that local practices of interpretation diverged in the two case studies in important ways.

Staff in Directorate E articulated a policy agenda comprised of both theme specific aims and generic horizontal issues originating in wider DG Research policy, such as ethics, small and medium sized enterprises (SMEs), competitiveness, environmental sustainability or the European Research Area (ERA). In thematic terms Directorate E's remit encompasses multiple disciplines, and has been affected by food scares and crises in the recent past, which have resulted in rhetoric of science serving society and efforts to broaden research to take social considerations into account.

This interdisciplinary agenda which priorities citizens needs (the Fork to Farm agenda for example) entails a willingness to challenge previous scientific practice of bounding 'the social' out of consideration. In fact in Directorate E the inclusion or consideration of social issues is understood to produce better science which is more fully concordant with Directorate E's aims. Staff thus described how administrating the policy agenda in Directorate E entailed coping with conflicting policy aims. SPOs were routinely required to balance and synthesis competing interests in many of their work processes, including, during contributions to the Framework Programme, the Work Programme and in the negotiation of inter-disciplinary projects.

In Directorate J on the other hand, staff articulated a policy remit quite distinct from the rest of DG Research and its generic horizontal issues, and described work processes which did not involve the negotiation of conflict or the synthesis of aims.

Furthermore, interviews showed that the translation of strategic policy aims in Directorate J is not predominantly steered by SPOs. Rather, it is heavily delegated to representatives from the nuclear industry, who are empowered to shape a strategic agenda and to devise projects in line with their own aims. Competing voices are explicitly excluded from these consultation mechanisms.

Describing their policy remit, Directorate J staff thus spoke of an extremely stable and narrow policy remit, which has not changed much since the establishment of the Euratom research programme. Generic aims such as the ERA or ethical or social considerations, though present in Directorate J's policy documents, were also discussed by staff almost exclusively in nuclear specific terms. These specific agendas included a focus on extremely technical research and the field's unpopularity, which caused problems of an ageing workforce and led to social resistance that hampers nuclear technological development.

In contrast to Directorate E, Directorate J's policy processes could therefore be described as constructing a protected policy environment where the exclusive aims of the nuclear industry are unanimously replicated and serviced without significant challenge. Directorate J's processes actively externalise both conflict over the premise of developing nuclear power and pressure to divert resources to other technological aims. A distinct boundary between technical and non-technical research, where the former is prioritized is also recursively stabilised. Thus, where Directorate E's policy practices tolerate conflict, bound the social in, and negotiate between competing policy aims, Directorate J's practices bound the social out and externalise competing perspectives to avoid conflict. Local interpretations of GM bore the hallmarks of these pre-existing practices and the meanings which they have constituted in each Directorates.

In Directorate E, staff in the Horizontal Unit described knowledge creation and mobilization processes which bore a striking resemblance to those described by the Gender Unit. 'By doing homework', Directorate E's Horizontal Unit explored practices which could be adopted to boost the number of women on its committees and convened a Food and Gender Network to support researchers in responding to GAPs. Its staff also assumed responsibility to insert gendered considerations into the Directorate E's sections of the Framework and the Work Programme, and assigned a person in each Unit to 'push' the gender agenda in their area. The work of making sense of gender equality commitments was thus not delegated to SPOs or scientific researchers. Rather, resources were actively deployed to elaborate a local understanding of the gender equality agenda and to actively coordinate activity around it using both documents and persons. The Horizontal Unit's activities can thus be characterised as an active attempt to synthesis gender equality policy aims with pre-existing policy agendas, in keeping with its pre-existing practices of negotiating and synthesising conflicting or divergent policy agendas.

Applying this analysis in Directorate J also showed an active process of interpretation and engagement with GM, but one which yielded very different results. Without this kind of analysis GM in Directorate J might simply have appeared the product of a passive response. Documentary research showed however how locally produced internal implementation documents actively bounded gender issues out of project procedures by explicitly prioritizing scientific aims over 'all additional points'. This actively discourages scientific teams from engaging with them, signaling that they are not relevant and will not be rewarded. In effect it *de*mobilizes persons with regard to the task. GAPs thus remained a comparatively 'empty' procedure with staff undertaking the minimum response to

'complete a questionnaire', without engagement with the topic in question ('the activities and the progress made in implementing the project's gender action plan').

The choice of staff member assigned responsibility for GM in Directorate J also certainly contributed to this outcome. Whereas the staff in the Gender Unit explicitly articulated the need for 'two knowledges', that of gender equality policy/issues and the functioning of DG Research, the WiS staff member chosen in Directorate J was not equipped with either. This staff member held no experience of SPO work, the nuclear field or science policy more generally, or of gender equality policies. These outcomes are therefore not an accident, or natural. Policy processes in Directorate J were mobilized to maintain and protect existing perspectives and minimize the impact of GM. GM imperatives have thus been interpreted and acted upon in Directorate J on the basis of the gender knowledge which it effectively sought to displace.

This pre-existing gender knowledge was comprised almost exclusively of the kind of assumptions which staff in the Gender Unit described as near-universal and problematic prior to the adoption of Framework 6. Staff in Directorate J did not perceive any structural factors which might affect women (or men's) professional progress or choices, and were unfamiliar with the variety of gender equality policies which could be adopted in response to the problem. Interviews also indicated anxiety, and emotional and defensive responses. Staff were also not aware of formal data on the participation of women and they also demonstrated an underdeveloped awareness of wider EU/European Commission gender equality policy, for example the Communication which provides a legal basis for GM. In the absence of these perspectives staff had vague and inaccurate perceptions of women's participation in their field (estimating the numbers of women presently

coming into nuclear industry on the basis of 25 year old personal anecdote for example) based on an assumption that whatever it comprised, the status quo was natural. This perspective represents a non-engagement with the topic; staff simply do no interrogate whether inequality may exist and their interpretive practices defend this non-engagement. Shared perceptions of good scientist and normative expectations of 'what it takes' were also clearly gendered.

These results therefore underscore the interplay between stabilization and interpretation, and document and persons, in the coordination of activity around any policy agenda, including GM. The Gender Unit's activities did not guarantee action on the GM agenda. Rather their suite of documents and structures define three dimensions of the gender issue, creating a meaningful elaboration of gender equality commitments for DG Research's work and prescriptive practices. This creates opportunities for engagement within the policy process which can then be exploited. For individual SPOs it creates the opportunity to incorporate gender equality considerations into their daily work, if they wish. Or, if the will exists further up the occupational hierarchy, as was the case in Directorate E, staff activity can be coordinated around the new GM policy agenda. When this occurs we can see the full potential of policy processes to coordinate action around a specified agenda.

Interviews in Directorate E did not show all staff describing their commitment to gender equality or their own perception of a structural problem. Most did however articulate a perception of the relevance of gender to their work, speaking of quotas, impact assessment, GAPs and the kinds of details which they entailed. This understanding of gender was comprised not of abstract commitments, or of personal anecdote, but of the new processes which they were encouraged and obliged to undertake. Thus although some could not articulate a coherent and developed perspective on gender inequality in science, their activities were

nonetheless coordinated around the structural conception of gender in equality and a shared understanding of the relevance of gender was stable and acted upon.

These processes cannot be expected however to pass without resistance. In both Directorates, the scientific community with which DG research interacts was described resisting GM. Staff in Directorate E spoke of how scientists still have to be pushed and explicitly instructed, whilst the Horizontal Unit staff spoke of how 'five years ago' staff 'had better things to do' or were 'annoyed' by GM related requests. Within the nuclear sector on the other hand a non-engagement with equal opportunities or work/life balance policies continues along with a habitualised non-engagement with social issues. Challenging this however, when equipped with the resources and knowledge is not necessarily difficult. As one staff member in Directorate E described, as a funding body DG Research can simply tell research teams 'do it, otherwise you will have problems …' Thus whilst Directorate E acts upon a willingness to challenge the scientific community and to reassess the local assumptions it had hitherto acted upon, Directorate J responded in line with its habitualised protection of the nuclear industry and externalization of non-technical or contentious issues, and its existing gender knowledge (the no data, no problem, no policy'[279] perspective described in interviews and DG Research's own internal documents).

[279] Stocktaking 10 years of Women in Science policy by the European Commission 1999-2009, European Commission Directorate General for Research: http://ec.europa.eu/research/science-society/document_library/pdf_06/stocktaking-10-years-of-women-in-science-book_en.pdf

Conclusions

Conceptualising Change: Gender Mainstreaming as a Knowledge Process

The reformulation of GM as a knowledge process thus enables exploration of the relationship between rhetorical commitments to GM and disappointing implementation results documented in so many existing studies (Bretherton 2001, Daly 2005, Woehl 2012 . Exploring the working practices which comprise staff's perspectives enables us to grasp how the relevance of gender in daily action is understood, and why GM might be unintelligible to policy implementers on the ground. Pre-existing policy processes can create an environment where both the range of actions and thus locally relevant or intelligible meanings is pre-established and restricted. Faced with a range of tightly stipulated policy activities, comprised of processes geared, for instance, towards the achievement of competitiveness or technical development, it is easy to understand how staff or an organisation may argue that gender is not relevant *here,* because within the restricted range of pre-established activities and aims, it is not. Tracing documents and associations throughout the policy process we can examine how these meanings come about and how they are stabilised, thus revealing local processes maintaining the marginalisation and de-politicisation of gender inequality. Applying this method which investigates local understandings in action and how they are constituted and maintained, to any policy environment could reveal the local mechanisms through which policy agendas are stabilised or opened for contestation.

One of the key processes perpetuating this in DG Research was the closely structured policy process and the hierarchical relationship between policy documents, which effectively split the negotiation of policy up across various stages, so that challenging the agenda, or inserting new aims required engagement at every level of policy negotiation and considerable resource. In generic terms this finding suggests that processes which split the negotiation of meaning and which

break policy down, into discrete activities might constitute stabilising mechanisms in any policy environment . This approach supplies a framework to examine these phenomena.

This analysis also shows that this kind of translation entails recourse to external knowledge based on a feminist analysis. In general terms this has been generated largely *outside* the state and is itself the product of *many decades* of development and research based on women's interests. GM was developed largely within NGOs (Carney 2002, Walby 2007) and represents the most recent step in the development of gender equality policy tools (Rees 1998). Theorising GM as a knowledge process I argue that we should locate it within the unfinished story of feminism and gender theory. As discussed in Chapter One the very concept of 'gender' represented a conceptual break precisely because it brought the phenomena of the *social* creation and systematic reproduction and enforcement of expectations concerning the sexes, into meaningful representation.

However, whilst the feminist movement has succeeded in changing social rhetorical discourse so that the ideal of 'equality for women' is more widespread, the intended meaning of the concept *gender,* and the finer points of its social construction has not passed into the popular consciousness (Zalewski 2010). Pertinent examples from recent social movements which support this argument are not hard to find. Mainstream press coverage of the recent international wave of SlutWalks clearly illustrated how many sectors of the wider public, whilst of course opposed to sexual violence, do not understand the role of sexist language in condoning violence to women, or in shifting responsibility from men perpetrating sexual violence, onto victims. Thus conceived GM implementation entails the translation of feminist concepts back into a cultural environment which is predicated on the de-

politicisation and the exclusion of women's interests (Stivers 1993). Challenging this kind of apparatus is inevitably slow and resource intensive. This case study shows it requires political backing, skill, apposite knowledge and resources, all of which are still developing both within and out with the state.

Re-negotiating the De-politicisation of Gender Inequality and Capturing Change

This analysis thus supplies a response to calls in existing literature for innovative tools, which enables us to understand the subtle dynamics of change (Chappell 2006, Childs and Krook 2006, Meier 2006, Verloo 2006) which GM has brought about. The changes which it reveals relate more to the re-negotiation and politicisation of gender inequality, than to actual policy outcomes or outputs, or the *displacement* of existing gender blindness.

I argued in Chapter Four that the Gender Unit's elaboration of GM and its establishment in DG Research's hierarchy of documents effectively inserted and book-ended an interpretation of the relevance of gender to science and DG Research's work. This approach to policy analysis argues however that policy is inevitably re-interpreted each time it is applied in a new context. *Displacing* gender blind processes further down stream therefore appears very unlikely based on this perspective. Rather, the results of analysis in DG Research show that the ir/relevance of gender is being renegotiated and re-populated with meaning at each stage of the policy process in DG Research, as a result of GM.

In Directorate J for example a 'two-pronged' elaboration of the relevance of gender *did* transfer into the collective perceptions of staff, but it remained devoid of any understanding of meaningful action. Examining local pre-existing gender

knowledge, which formed the repertoire through which GM was understood, this outcome is understandable. Analysis showed the pre-existing boundary work and practices of exclusion and narrowing, which lead to the dominance of this gender knowledge and the absence of perspectives which might have rendered GM intelligible or workable. It also showed the concrete, traceable processes through which Directorate J's marginalisation of GM was stabilised so that activity continued to be coordinated around the pre-existing policy agenda.

Despite these outcomes, so clearly characterised by successful resistance, I argue however that the argumentative terrain for the exclusion of gender equality issues has shifted in the whole of DG Research, including in Directorate J. Subsequent to GM, Directorate J has had to mobilise more resource than before to exclude gender equality issues from its remit, and has been drawn into a more explicit negotiation of its position. This in itself represents a positive change. Previously, the irrelevance of gender inequality was simply 'a matter of indifference', which went wholly unchallenged.

In addition, actors willing (and knowledgeable enough) to exploit the new opportunities to boost the number of women in decision making or to incorporate gender into new research projects now enjoy a degree of access to Directorate J's agenda and resources (as evidenced by the Gender Unit's insertion of the project on breast cancer screening) which was previously absent. Furthermore, institutionally sponsored accountability mechanisms bring about the collection of data documenting how DG Research performs with regard to GM commitments. This also supplies leverage for contestation and challenge of the status quo.

These processes thus render non-engagement with gender inequality more visible than before and represent part of an intricate (and slow) process of contestation, where gender inequality is contested more explicitly than previously. Even though the end results in Directorate J for example might not seem encouraging for gender equality activists, GM nonetheless still constitutes a challenge to existing practice and eases an engagement with gender inequality where opportunities for contestation were previously very restricted.

The establishment of a GM apparatus and a suite of policy documents elaborating a local description of the relevance of gender, has thus shifted the balance away from the previous *unchallenged* dominance of gender blindness. Pockets have been established within the state where gender's relevance has to an extent been pre-argued, significantly altering the argumentative terrain for actors wishing to pursue gender equality actions (for example in Directorate J, inserting a gendered project into the Work Programme).

The policy apparatus created by the Gender Unit on account of GM, thus supplies moments within the policy processes where actors willing to act on the gender equality agenda *can do so* without having to expend the same resources arguing their case, as would have been the case before Framework 6, or devising a way so to do. In Directorate E this opportunity was maximised so that a significant quantity of staff action was coordinated around the service of a structural conception of gender inequality. GM implementation in DG Research has not therefore wholly 'displaced' pre-existing gender blind policy agendas, but it has loosened their dominance by facilitating the deployment of some state resources into the service of a gender mainstreamed policy agenda.

GM has also resulted in this instance in the creation of an evidence base which can be deployed in policy negotiations and which is routinely fed back into the policy process. Actors wishing to argue 'there is no problem' are now confronted with a large evidence base (which they cannot match) to the contrary. This is a helpful new resource in the contestation of the state's non-engagement with and non-perception of gender inequality. Lobbyists wishing to argue vertical occupational segregation for example do not any longer need to create these materials themselves. Others wishing to show that scientific research can deliver different benefits to men and women, can use DG Research's monitoring and evaluation reports which routinely assess gendered impact.

The analysis yielded by this approach thus presents an argument, in contrast to the prevailing commentary in much academic literature, that GM as a policy should not be written off – it represents a contestation of pre-existing systematic de-politicisation of gender inequality and can result in the deployment of state resources to loosen previously dominant practices. Although the results can be disappointing when the resources to exploit the opportunity which GM potentially represents are lacking, GM nonetheless presents opportunities to alter state practices from within.

Limitations

The theoretical framework developed throughout the thesis thus enables us to open GM implementation out, to uncover the micro processes underpinning positive or disappointing results in greater detail and to enhance our understanding of how gender blind or gender biased assumptions are maintained. Some characteristics of the case study and the analysis it has yielded however, leave scope for further development and research. Key amongst these is the highly structured and formal

nature of the implementation and policy making processes at play in DG Research and the comparatively small implementation network it comprises.

Findings in DG Research showed how tightly stipulated implementation processes (including work processes such as evaluation, negotiation and impact assessment, or the renegotiation of the Framework and the Work Programme), structured the shared assumptions and language which are workable within DG Research, including gendered assumptions. This formalised policy implementation environment does not however, supply opportunities to analyse *informally* constituted and maintained policy assumptions, or to apply the method to looser implementation structures. In future, these certainly merit further investigation as existing literature has noted the importance of both in impeding GM implementation (Hafner-Burton and Polack 2002) and the advancement of women or women-friendly policies (Annesley and Gains 2012, Kathlene 1995). Focusing on these more informally constituted practices and processes, might involve examining how materials are also involved in their maintenance, or augmenting the gender knowledge approach with further discursive or new institutionalist concepts to capture non-material dimensions in-depth.

Secondly, this Thesis chose a manageable case study within which to develop this approach and eschewed macro level analysis in favour of a micro level analysis of implementing organisations' 'internal' processes, which was premised on IPA assumptions. Within the wider political context however, GM policy processes often span differing levels of government/governance, either within states, or straddling both the supra-national and national level. In view of the IPA-led assumption that multiple communities of fluid and overlapping meaning are at play in any given instance of policy implementation, movement between levels or locations of government/governance, constitute a key location for future research. As such, the theoretical insights generated in this project provide a useful tool kit for analysis

within organisations, its application to more complex networks of government/governance however would require further development.

Recommendations

Finally, by illustrating how complex GM policy processes are, this approach provides evidence to argue that GM cannot realistically be expected to yield visible change in policy *outcomes* in the space of only ten years. Indeed, on the basis of experience as a policy consultant, this approach to the measurement of policy success struck me as unrealistic, particular given GM's characteristic as a meta-policy. As such GM should be considered an extremely long term strategy and implementers and assessors should be cognisant of the significant *internal* changes which GM implementation entails.

Evidence gathered in this research project also indicates that implementing a meaningful GM apparatus requires significant expertise and resources along with and intervention in each stage of the policy process. An active and explicit translation of abstract commitments to gender equality into local meanings and processes, in a manner just as prescriptive as that undertaken with regard to mainstream policy, is therefore required for effective policy implementation. This should also be accompanied by clear lines of responsibility for overseeing and driving GM interventions accompanied by clear evaluation and assessment procedures. The GM policy cannot be expected to progress 'on its own'.

Annex I: The MAGEEQ Critical Frame Analysis Tool

(Short version, reproduced from Verloo 2005:30)

Voice

- Voice speaking
- Perspective
- References:words/concepts (and where they come from)
- Refernces: actors
- References:documents

Diagnosis

- What is represented as the problem?
- Why is it seen as a problem?
- Causality (what is seen as a cause of what?)
- Dimensions of gender (social categories/identity/behaviour/norms and symbols/institutions)
- Intersectionality
- Mechanisms (resources/norms and interpretations/legitimization of violence)
- Form (argumentation/style/convicion techniques/dichotomies/metaphors/contrasts)
- Location (organization of labour/organization of intimacy/organization of citizenship)

Attribution of roles in diagnosis

- Causality (who is seen to have made the problem?)
- Responsibility (who is seen as responsible for the problem?)
- Problem holders (who problem is it seen to be?)
- Normativity (what is a norm group if there is a problem group?)
- Active/passive roles (perpetrators/victims etc)
- Legitimisation of non-problems(s)

Prognosis

- What to do?

Annexes

- Hierarchy/priority in goals
- How to achieve goals (strategy/means/instruments)?
- Dimensions of gender (social categories/identity/behaviour/norms and symbols/institutions)
- Intersectionality
- Mechanisms (resources/norms and interpretations/violence)
- Form (argumentation/style/conviction techniques/dichotomises/metaphors)
- Location (organization of labour/intimacy/citizenship)

Attribution of roles in prognosis

- Call for action and non-action (who should [not] do what?
- Who has voice in suggesting suitable course of action?
- Who is acted upon (target groups)
- Boundaries set to action
- Legitimsation of (non)action

Normativity

- What is seen as good?
- What is seen as bad?
- Location of norms in the text (diagnosis/prognosis/elsewhere)

Balance

- Emphasis on different dimensions/elements
- Frictions or contradictions within dimensions/elements

Annexes

Annex II: Sample interview schedules

Interviews were semi-structured. In general the topic guide served as a fall back, with the interview proceeding in a different order, to that laid out on the schedule.

Interview schedules took account of the differing perspectives which staff in the Gender Unit, staff driving gender in the operational Directorates, and scientific project officers would articulate on the gender equality agenda in their work. A sample topic guide for each of these professional roles is reproduced below.

Topic Guide

Gender Unit Staff

Rosalind Cavaghan

Email R.M.Cavaghan@sms.ed.ac.uk

Mob 00 XXX XXXX XX

Incorporating Gender in EU Science and Research Policy

Interview Introduction

I am a researcher in political science at the University of Edinburgh and I have a background from consultancy in policy and programme evaluation. My PhD looks at how EU women and science policy and how it's been initiated as a policy area and how its practiced.

I've been sign posted to you as a key actor in the initiation and development on WiS policy in the EU.

So before I go onto questions I need to mention confidentiality. I work according to the code of ethics set out by the Economic and Social Research Council and the University of Edinburgh. This means that everything you say to me is confidential and that I will protect your identity in any write up.

To ensure accurate reporting I do like to record my interviews – are you willing to be recorded?

Now I think its only fair to ask if there's anything you would like to ask me about my research before I start asking you questions?

Resources and Structures

1. Can you describe for me in your own terms what your role in WiS policy has been?
   [Prompts – set up the unit – how was that possible?

Source of mandate for this? (FP goal?)

2. Can you tell me about the structures which were put in place?
E.g. …

- WIS group
- Group of Commissioners
- Helsinki Group

3. What was the intended function of each of these? Did these feed into the policy agenda? [Prompts – exert pressure, how? With expertise? – effective?]

4. What has been the effect of these?
   - In different locations?
   - How received and understood?
   - Impact?

Policy Context

5. Can you tell me the *who initiates policy or where policy priorities are initiated*?
   [Prompts: When I hear about the 'The Hierarchy of Policy Makers' who actually constitute this – and what's the variation in role between them?

   What degree of freedom does the President/do individual Commissioners have, to initiate or steer policy implementation?

   Where does the scientific community give input? Where does the WiS agenda get input/access?]

6. What would you say are the main aims driving research policy just now?
7. In the eyes of the hierarchy of policy makers, or the 'main' decision makers in WiS, where does WiS fit into these?

Close

6. That is the end of my prepared questions – is there anything you would like to comment on further?
7. What questions would you like to ask me?
8. Would you be interested in the results of my research? How might I be able to make my research helpful to you?
9. Can you recommend any other actors or documents which you think should be included in my research?

Topic Guide

Rosalind Cavaghan
Email R.M.Cavaghan@sms.ed.ac.uk
Mob 00 44 XXX XXXXX

Gender Lead Directorate J

Incorporating Gender in EU Science and Research Policy

Interview Introduction

I am a researcher in political science at the University of Edinburgh and I have a background from consultancy in policy and programme evaluation. In this research, which is my PhD thesis, I look at how ideas about gender equality permeate systems of governance or policy – actually *how* these things are put *into practice*. I visited the Unit for Scientific Gender and Culture earlier this month and they told me about this role of a gender equality officer and sign posted me to you.

So the aim of this interview is to understand what you do and the system you operate in, and as a political scientist I'm also interested in the politics of things, participation of different groups or institutions, the culture you have to operate in, these sorts of things.

The final thing to mention is confidentiality. I work according to the University of Edinburgh's code of ethics - everything you say to me is confidential. My write up will not quote anyone by name, and I am bound by university codes of ethics to protect your identity.

To ensure accurate reporting I do like to record my interviews – are you happy for me to do that?

Now I think its only fair to ask if there's anything you would like to ask me about my research before I start asking you questions?

GENERAL

1. To understand your situation can you tell me about your full time role, before we get onto your work as a GE officer? [Probe, links/structure of DG info and society/Research, any oversight/decision making involvement/contact]
2. And how did you come into your role as a GE officer/Gender Contact?
3. What does the role actually involve?

[Probe

- targeting what/who?
- What is the relevance of gender in this Directorate? How do you know what that message is? (contact with other fem sources except Unit L4?) Awareness of greater GE agenda in DG R or EU?
- Tactics of persuasion ('strategic framing'?)?
- Scope for self definition of role?
- Access to decision making – if not on what grounds?
- Networking/lobbying/influencing]

4. What support structures or resources are available to help you in this? Or tools – can you back yourself with publications or expertise?
5. How would you say your role effects the people you're targeting – what are how do they experience it? What other pressures are they subject to?
    - What are their over arching aims or pressures? Limitations?
    - What are their challenges (lack of funds/policy instruments? differences in MSs?, Different lobby groups?)
6. And where does Women in Science policy fit in? In your opinion and in theirs
    - In terms of aims,
    - and tools?

Close

7. What would you like to add which we haven't already covered?
8. Who else do you think I should include in my research to get the full picture of how gender equality actions/practices are going?
9. Can you recommend any other actors or documents which you think should be included in my research?

Topic Guide

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Operational Staff, Directorate E DG Research

Incorporating Gender in EU Science and
Research Policy

Interview Introduction

I am a researcher in political science at the University of Edinburgh and I have a background from consultancy in policy and programme evaluation. In this research, which is my PhD thesis, I look at how ideas about gender equality are actually put into practice in governance or policy.

I visited the Unit for Scientific Gender and Culture earlier this year and I'm now doing case studies of Directorates in DG Research.

So the aim of this interview is to understand what you do and the system and culture you operate in – I'm interested in your perspective on that, there are no tricky or technical issues I want to ask you about. We'll start of with general questions about your field so I understand what the primary drivers in your work are, only once we've covered that will we start to talk about gender, ok?

The final thing to mention is confidentiality. I work according to the University of Edinburgh's code of ethics - everything you say to me is confidential. My write up will not quote anyone by name, and I am bound by university codes of ethics to protect your identity.

To ensure accurate reporting I do like to record my interviews – are you happy for me to do that?

Now I think its only fair to ask if there's anything you would like to ask me about my research before I start asking you questions?

GENERAL

1. First of all can you tell me a bit about your professional background, you have a background in scientific research yourself? How did you move into the Commission? And your present role?

2. So what does your role as project officer actually involve?

- Evaluate projects? Support them? How?
- Your particular theme or discipline?
- What kind of projects (international, collaborative, interdisciplinary?) and research questions (natural scientific, social, policy, how questions, why questions, comparative, specific?
- Roughly how many projects at a time?

3. What are the research questions/themes which your directorate is prioritizing in **your** field at the moment?
    - Quite technical or social? Impacts of policies or of chemicals for example?
    - Particular methodologies or approaches = favoured? (interdisciplinary?)
    - Are these being pursued within the wider scientific community anyway, or are they EU specific themes?
    - Is there a particular ethos to research funded by the EU (more social, more technical/excellent, practical, international?)

GENDER ISSUES

4. Can you tell me a bit about gender issues in your field?

- Women's participation? In projects on committees?
- Research themes: are those derived from the other strategic areas of interest in the field?
- Does gender change any of the research questions asked?
- Does gender ever mean new research methodologies (trials with men/women ages or ethnicities?)
- Can you think of any research where gender is a key explanatory factor or part of the research question, so that if it was taken out the project would be answering different questions?

4. How do you deal with gender in your role?

- Women's participation?

- Supporting projects to insert a gender aspect?
- How do you do that?
- What advice and support do you get on identifying and researching gender issues?

5. Is it easy to get researchers in your field to include gender aspects?

[Probe –

- do you think its easy/hard in other fields?
- Why do you think it's easy in this field? Social aspect of research questions?
- More female researchers?

6. What difference do you think taking gender action plans out, has made?
7. Are there any documents you think I could look at which give more information or examples of gender in 'food' research?

Close

8. What would you like to add which we haven't already covered?
9. Would you be interested in seeing a summary of results?

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